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American



Reg. U.S. Pat. Off. Commercial Vegetable Grower Market Growers Journal

VOL. 9

No. 4

APRIL. 1961

Cover photograph by Grant Heilman

"For, lo! the winter is past, the rain is over and yone; the flowers appear on the earth; the time of the singing of the birds is come, and the voice of the turtle is heard in eur land." —The Song of Solomon, II, I.

FEATURES

The New By L. B.		11	
Weather: Problem By John I	ns	or Florida's Disease	
	is On!! m J. Monahan	14	
Are Nema By Arden		arm?15	
	D. Campbell		
Broccoli	For Both Co	oasts	26
Collards	A Harvest E	very Month	26
Cucumbers		r Acre	
Greenhouse Crops	Nitrogen for By Fred K.	Tomatoes	32
	Form Hothou	se Section	32
Onions	Controlling (By J. P. Sla	Onion Maggot	16
Tomatoes	Approved for	Use	16
	Is the East C. By W. Brace	atching Up? If ord Johnson	16
	What's Their	Secret?	20
	DEPART	IMENTS	
Letters to the Edito		State News	
Plant Grower's Cor	ner22	Packaging & Marketing Calendar of Coming Events	44
Answering Your Q As It Looks to Me.		New for You	50
You be the Expert.		Editorials	54
Markets Trends	and Forecasts41	Coming Next Month	54

Letters to the Editor	State News42
Plant Grower's Corner22	Packaging & Marketing44
Answering Your Questions28	Calendar of Coming Events46
As It Looks to Me30	New for You50
You be the Expert38	Editorials54
Markets Trends and Forecasts 41	Coming Next Month54

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New LETTERS TO THE EDITOR

A Grower Looks at Pricing

Dear Editor:

The controversial question of what is a fair price charged the consumer over what is paid the producer is giving much concern to producers.

Some retailers think that the producer

should not be concerned about their practices of serving the consumer, especially after they have invested their money in the

produce in question.

Some retail distributors, as a matter of policy, co-operate with the grower to make maximum efforts coincide with production peaks. Beneficial results thereby are appreciated by the grower, the retailer, and the

Fundamentally, the retailer's job is to divide the produce furnished him in wholesale quantities into small amounts which will satisfy the consumer's demands. He provides facilities to perform such duties and is entitled to a fair income for such

It is the opinion of the grower that we are closely related and dependent upon one another. The producer's welfare is governed largely by the performance of the retailer. Therefore, the grower must be interested in his produce after it leaves his possession even after he has been paid for it.

In many instances, highly perishable produce is overpriced to the consumer. This practice restricts the demand thereof, resulting in withered and deteriorated displays unattractive to the consumer, who

will not buy.

Reflection of this abuse naturally is passed on to the producer, who is restricted in his efforts to furnish fresh supplies to replenish the retailer's shelves. He therefore must delay harvest, store or hold his produce to meet this condition. The result is, when he does market this produce, it may be overmature or not in its best possible salable condition. Furthermore, it is usually sold at a lower or distress price.

Naturally, when perishable goods are fairly priced, more customers will take advantage of the situation and buy more freely. This will require replenishing of displays with more fresh and attractive produce which again will more quickly

find its way into the consumer's hands.

There is seldom overproduction in fruits and vegetables. Underconsumption by people who cannot afford to purchase high-priced produce is more likely the rule. The practice of proper pricing will benefit the producer, who will be able to let his produce reach closer maturity, giving it more flavor and attractiveness.

The retail distributor will also benefit by better satisfied customers, faster turnover of money invested, and no doubt dollar volume will be increased.

In summary, the grower wants his prod-uce distributed to the consumer in the best possible condition, which means it must pass over the retailer's shelves in the least possible time and in volume commensurate with the supply.

Cleveland, Ohio

A. G. Heinrichs

There is mounting concern among vege-table growers regarding chain store marktable growers regarding chain store mark-ups and pricing policies. Ollie Heinrichs, a leading greenhouse tomato and Bibb let-tuce producer, has had long experience, and his moderate and considered views will be of interest to vegetable producers everywhere. A closer understanding between chain store and grower will solve many of these problems. But how can this under-standing be achieved?—Ed.

Braceros Get His Support

Dear Editor:

Here's a check to renew my subscription to your fine magazine. I'm right behind you in your stand against the unions who are fighting the Mexican migrant laborers and trying to kick them out of the country. The braceros work hard in an effort to make enough honest money to keep their families, and they do not continually agitate (as do all the unions).

Attached is a clipping from our local newspaper describing union tactics here in California lettuce growing area. tells how 50 men, some armed with clubs, stormed into a bracero camp and started a riot which sent four men to the hospital (two braceros, the camp cook, and the

son of the camp's owner).

The mob supposedly tried to set fire to a barracks. Officials of the Agricultural Workers Organizing Committee denied that they ordered the attack, but a unionowned pickup truck with the lettering "Get Wise, Organize" on its side was parked outside the camp, and the truck's driver was among the 38 men arrested by sheriff's deputies who sped to the scene.

San Diego, Calif. Roger C. Akin

Liked Carew's Chain Article

Dear Editor:

We have been intensely interested in the two-part article by John Carew, "We Ana-

lyze Chain Buying Practices."
Please convey to Dr. Carew our compliments. It was extremely well done. So well that we would like you to send us tear sheets of the article. Hagerstown, Md.

American National Growers Corp.

The Baimas Win Again

Dear Editor:

Since last year about this time when you featured a letter and photograph of us with our prizewinning produce, we've captured a new national record of points scored for quality vegetables at a county fair. In 1959 we established a county, state, and national record with a point total of 437. This past season we this record with a total score of 473 at the Nevada County Fair. The USDA tells us they do not have any record which tops ours

It's quite a challenge to raise heat-loving crops in our cool, mountain climate, but we succeed even with melons, peppers, toma-toes, and okra. We've found the use of hotbeds very helpful. Val and Lilly Belle Baima

Nevada City, Calif.

Our Side of the Story

Dear Editor:

Your recent editorial about CBS's mishandling of the "Harvest of Shame" program pleased me very much. Needless to say, I agree with it. I wish every farmer in the United States would boycott every product advertised on CBS for six months. That would be retaliating where it hurts most—in the pocketbook. Letters or telegrams of protest to the network won't do any good. However, letters to sponsors might work wonders.

The irresponsible crowd that creates such one-sided propaganda deserves any treatment that American farmers can hand out. Woodland, Calif . Name Withheld



FOR

BROAD SPECTRUM

INSECT CONTROL ON VEGETABLES

depend upon

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Black bean aphids Carrot runt flies Colorado potato beetles Corn earmorms Diamondback moths Dipterous leaf miners Flos beefles Harlequin cabbage bugs Imported cabbageworms Leafhoppers Mexican bean beetles Miles Onion maggots Owing thrips leed carn maggats Southern potato wireworms Vinegar flies (Drosophila sp.)

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Watermelone

Winter squash

Goodrich Revisitedor 3 Years of JIFFY-Potting



Cantaloupes 2 weeks after seeding in 3" square Jiffy-Pots, Goodrich had the first Cantaloupes on the Twin Cities market from these plants. Photographed April 29. Since they've been starting plants in Jiffies they've become known for the earlie

Three years ago a wholesale vegetable grower named Goodrich in Champlin (northwest of Minneapolis), Minnesota heard about how vegetable growers in other parts of the country were having success in starting plants in Jiffy-Pots. He decided to give them a try in his diversified operation. Goodrich grows produce for several local top quality supermarket chains and for a large, very successful roadside stand as well.

We called on him recently to see how his Jiffy-Potting was going, we'll let him tell his own story:

"We used to start Melons, Peppers, Eggplants, Tomatoes, and the like in bands, but they had to be split and the work went slowly. With Jiffy-Pots, we use a Holland Transplanter and can get a great deal more plants set out in a day. This way we can increase our production because help is really tight in the spring. We've noticed that the plants get off better, too-with Jiffies the roots are not disturbed during transplanting. Of course, the big payoff is earliness-it really pays dividends to be first in the market up here, and our Jiffy-Plants really bring us in early."

> Like further information about growing vegetables in Jiffy-Pots? Write for TB \$10, Use of Peat Pots on Vegetable Crops.



Tomatoes in 3" square Jiffy-Pots were sown Feb. 10, 1959, trans-planted into flats March 18, and potted into Jiffies April 1. Photo four weeks later shows growth ideal for field planting without



Junior Goodrich proudly displays quality Melons grown in Jiffies during the 1960 season and sold at the Goodrich stand on a main highway near Champlin. Here the Goodriches take a double profit from their own high quality, extra

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Vegetable Grower

INSECTICIDES...

AND THE PESTS THEY CONTROL

By L. B. REED

U. S. Department of Agriculture Beltsville, Md.

SEVERAL valuable insecticides, such as Sevin, Kelthane, dibrom, and Diazinon, have become available to vegetable growers within the past few years. Each chemical is different and is specific for certain pests. Each is a poison and must be used with intelligence. Each has its advantages and disadvantages. None should be used except for a specific purpose. Some are no more hazardous to use than many common household chemicals and the vegetable grower should know them and know when they will best meet his needs.

Sevin, recently released for use on beans, potatoes, and sweet corn, represents an entirely new type of chemical insecticide. It is a carbamate compound, whereas most of the newer insecticides are either phosphate compounds or chlorinated organics.

The low mammalian toxicity of Sevin and the fact that it is not stored in the fat, meat, or milk of animals make it of particular interest to vegetable growers who feed pea vines or other crop refuse or by-products to dairy or meat animals.

Although Sevin is best known for its effectiveness against the Mexican bean beetle, it is useful in control of corn earworm, potato leafhopper, cucumber beetles, pickleworm, Japanese beetle, stink bugs, and grasshoppers.

In general, Sevin is not effective against aphids and mites and is quite toxic to honey bees and other pollinating insects.

On the other side of the ledger, Sevin sprays of good physical quality are difficult to formulate and growers may have trouble with applying some preparations from low-gallonage sprayers. Sevin is safe to handle, al-



New insecticides now help to control such pests as tomato hookworm.

though, as with any insecticide, good hygiene is advisable in handling it. One should wear clean clothing and avoid repeated and prolonged contact with the skin and the inhalation of dust or mists.

Sevin can usually be applied up to the day before harvest if the plants are not to be fed to livestock. Onsweet corn the waiting period is seven days if any part of the plant is to be used for feed. The usual effective dosage is ½ to 1 pound per acre.

Kelthane, in contrast to Sevin, is very useful in the control of spider mites, but is of little or no value against other insects. The effective dosage is ½ to 1 pound per acre. Kelthane is a chlorinated organic of low toxicity that is among the safer materials to handle. However, it should not

(Continued on page 47)

Weather Sets the Stage for FLORIDA'S DISEASE PROBLEMS

Heavy rainfall and over-wintering disease-producing organisms require that growers make 20 or more spray applications

By JOHN F. DARBY

Central Florida Experiment Station, Sanford

WHILE much of the nation is busy producing vegetables for the snow-covered areas. Annual at-the-farm value of Florida's vegetable production is approximately \$150 million. This is second only to citrus in the Sunshine state's agricultural economy, and Florida is second only to California in the value of fresh market

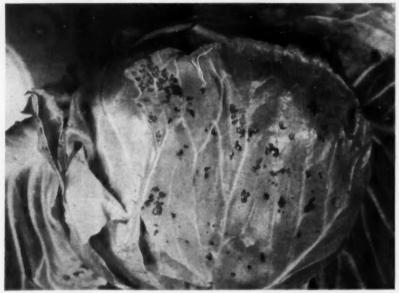
vegetables.

Increased production costs without corresponding increases in prices received for vegetable crops have forced many small growers out of business. The trend is toward larger units where costs of production can be lowered by more efficient use of agricultural machinery and through the use of the extension service and private consultants who advise growers of the most effective and economical materials and methods of disease control developed by state and federal re-

search agencies.

Diseases of vegetables are probably more severe in Florida than in any other state due to heavy rainfall, high humidity, and the fact that many disease-producing organisms can overwinter on living hosts. Under normal conditions most vegetables are sprayed once a week and under conditions of severe disease activity they are sprayed twice a week. It is not unusual for one crop to be sprayed 15 to 20 times or more with a fungicide, using from 100 to 200 gallons per acre per application.

Vegetable growers are well aware of the danger of harmful residues at harvest and are careful to comply with the recommendations of government agencies as to dosage and time intervals between the last spray application and harvest. Some growers have residue analyses made by private laboratories to avoid leaving residues



Downey mildow symptoms on cabbage. Disease is controlled by spraying with nabam, zinc sulfate.

higher than the tolerances established by state and federal regulating agen-

Soil-Borne Diseases .- As recent as 10 years ago, major portions of such crops as tomatoes and watermelons were planted on new land. This practice is rapidly diminishing as new land is becoming more expensive and difficult to obtain. Today the major portion of the vegetable crop is planted on land previously planted to vegetables. Sweet corn, celery, snap beans, cabbage, lettuce, endive, radish, spinach, and other vegetables are often grown in mile-long rows year after year on great tracts of peat and muck soils of the Everglades, Island Grove, and Zellwood areas.

The organisms causing wilts, damping off, and root rots are becoming more severe each year on both mineral and peat soils. The wilts are largely controlled by use of resistant varieties. Damping off in the field is avoided in the most susceptible crops by starting them in sterilized soil in seedbeds.

Methyl bromide and chloropicrin are the best materials for sterilizing seedbeds, but because of the inconvenience and expense of application they are being replaced by materials that can be applied as drenches, such as Mylone, Vapam or VPM, and various emulsified mixtures of allyl alcohol and nematocides.

Root rots are controlled by chopping down cover crops and allowing



52% of plants in antroated lettuce plot show typical symptoms of lettuce drop (scieratiniose)



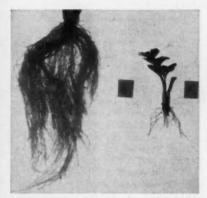
This plot received six applications of mixture of 2 pounds each of ferbam and hydrated lime as spray an lettuce and surrounding soil. Compare growth with untreated lettuce plot in top photo.

comes from planting infected seed. The disease may be controlled by treating the seed with hot water, but this is a tedious process requiring special equipment and training. Two centrally located hot-water seed-treatment units have been established and plans are underway for all cabbage growers to have their seed hot water treated.

Late blight of celery is avoided by merely holding the seed for two or three years until the fungus is dead. However, when new varieties are released growers sometimes fail to comply with these recommendations.

Most seed are also treated with thiram, chloranil, or one of the organic mercury compounds to avoid seed-borne diseases.

Foliar Diseases.—Late blight of tomatoes and potatoes; Helminthosporium blight of sweet corn; early blight of celery; downy and powdery mildew of cucumber, watermelon, and squash; downy mildew of cabbage and lettuce; and last but not



Root systems of celery from treated (left) and untreated beds. Treated bed received a drench containing emulsified mixture of allyl alcohol, Shell DD, and urea-formaldehyde concentrate.

them to dry completely before turning them under six to eight weeks in advance of planting. Fungicide sprays containing a 50-50 mixture of captan and Terraclor also are used on beans when they are seeded to control root rots and on pepper and other crops after they have been transplanted to the field.

The fungus which causes the dreaded cool weather disease known as sclerotiniose of celery, beans, cabbage, and other crops is one of the most difficult to control because the sclerotia (resting bodies) remain viable in the soil to attack succeeding crops.

Flooding the land to rot the sclerotia is practical if a supply of water is available. Rotation and deep plowing to bury the sclerotia will help reduce the disease. Treating the soil with cyanamid several months before planting is also practiced. Recently,



Mile-long-beds of radish, spinach are most efficient for use of machinery in Zellwood peat area.

sprays containing ferbam and Terraclor have been found to reduce the incidence of the disease on lettuce and celery

Seed-Borne Diseases.—Blackrot of cabbage, a systemic bacterial disease, was very destructive in south and central Florida during the fall of 1960. The primary source of inoculum

least, bacterial leaf spot of tomatoes and peppers are the major foliage diseases of vegetable crops in Florida. Regular fungicide or bactericide applications are required to control these diseases.

Spraying is usually much more effective than dusting for the control (Continued on page 38)

THE FIGHT IS ON!!

Labor organizers are continuing their battle for a place in the California sun. Having struck lettuce farms, their strategy involves continual harassment of vegetable and fruit farms as the harvest moves from the Mexican border to northern California. Bill Monahan, who is located in the heart of the vegetable and fruit producing area of the Golden State, presents the situation as it exists as this issue goes to press.

By WILLIAM J. MONAHAN

Special California Correspondent

THE future of California's great farm industry hangs in precarious balance these days as two angry forces snarl at each other in every field and orchard from the Imperial Valley near the Mexican border to the northern reaches of the Central Valley.

The tempo of economic conflict between the embattled growers of the West Coast and the organizing troops of the AFL-CIO's Agricultural Workers Union and the United Packinghouse Workers is mounting daily as the great harvest season looms on the horizon.

Warned by the violence of the campaign of labor organizers in the \$20 million lettuce harvest of Imperial Valley against the use of Mexican braceros and the militant demands for a 30% increase in field wages, vege-

table growers are girding themselves for a battle in 1961 that will make the labor turmoil of 1960 resemble a pink tea.

Not a single representative farmer nor farm organization has shown any inclination to negotiate with the labor unions and in the last rash of organizational activity in the winter lettuce harvest, growers refused to budge on their wage rates even though many of them lost some production. In Imperial Valley the union demanded a wage increase from 90 cents an hour to \$1.25.

Governor Edmund G. Brown has been vainly striving for months to get the leaders of Organized Labor and Agriculture to sit down together to compromise their differences through legislation that would prohibit strikes against perishable crops and provide for labor union recognition. He has even reluctantly indicated that he will accept compulsory arbitration as a feature of a state labor relations act.

So explosive is the situation that only two pertinent legislative measures have been introduced so far in the current session of the Legislature—a bill sponsored by the AFL-CIO to establish a \$1.25 minimum wage for farm workers and another which would place farm labor under coverage of unemployment insurance. Under existing conditions neither bill has the support of Governor Brown—and neither has a ghost of a chance of enactment this year.

Growers anticipate worse conditions this year than last. John V. Newman of Ventura, president of Council of California Growers, announced recently that his organization hopes to have strike insurance available for farmers by early April. The council is working out a program to form a "reciprocal" company from which members can purchase strike insurance. In some crops the costs will run as high as \$1000 an acre.

With California in the midst of tomato planting time, there is considerable reluctance among tomato growers to plant maximum acreage even though this year's pre-season contract price is already up to \$27.50 a ton guarantees. This price is \$5 above last year and the highest field price in almost 10 years.

California growers who normally plant more than 125,000 acres and produce in excess of 2 million tons of tomatoes are alarmed that their labor situation could become hopeless by summer if labor unions continue their attacks on Mexican bracero employment. The Mexicans traditionally comprise 85 to 90% of tomato work

Independent labor recruitment offices are being developed throughout the state to offset the possibility that farmers will be cut off from State Farm Placement services by picket lines.

Last year state superior courts acting on individual petitions forced the (Continued on page 34)

SACRAMENTO, CALIF—The Mexican Government has informed California farm leaders that it does not plan wholesale blacklisting of West Coast farms in its export of bracero labor to the United States.

However, a Mexican spokesman said his government would continue to keep close watch on employment of Mexican Nationals in labor crisis regions to make sure their personal safety is not threatened. In the closing days of the winter lettuce harvest the Mexican government halted movement of braceros into California's Imperial Valley, New Mexico, and Arizona and urged transfer of braceros already in the United States to farms where no labor trouble existed.

Despite the assurance from Mexico City that the bracero labor would not be withheld from California, the pattern of Mexican action in Butte County in 1960 and this winter in Imperial Valley has frightened growers who use large crews of manual labor including Mexicans. They fear that the labor unions will continue to use the strategy of violence—real and phony—to in-

unions will continue to use the strategy of violence—real and pnony—ro intimidate the Mexican government.

So deep is the fear of a labor shortage next summer that in March only 30% of the potential tomato crop had been planted in California, imperiling the welfare of the huge California tomato industry which annually accounts for \$200 million worth of processed products, has a minimum farm value of \$50 million, and employs 100,000 or more persons on farm and in factory during the summer season. If plantings are not stimulated by the end of April, there will be NO raw product for the industry in the August-October harvest season.

Governor Edmund G. Brown and other California state and farm officials are anxiously awaiting developments in the \$20 million asparagus crop to determine if Agriculture Workers Union will continue the same tactics in the Sacramento-San Joaquin Delta region as were used in the Imperial Valley.

ARE NEMATODES on Your FARM?

If you suspect nematodes are in your vegetable fields here are several ways to help you determine their presence

By ARDEN F. SHERF Cornell University, Ithaca, N. Y.

HAVE you been wondering if the nematodes that you've read so much about lately might be on your farm reducing yields or making those "poor" spots in your fields?

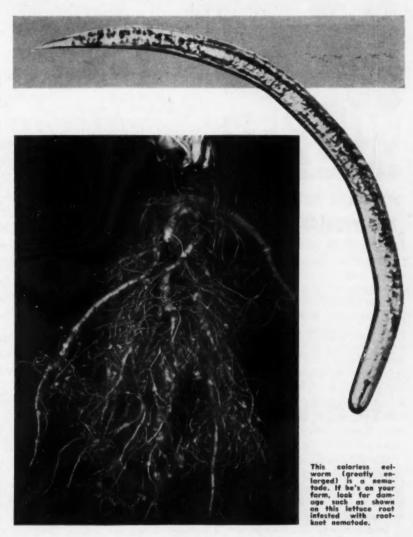
It seems these tiny worms each year appear in new areas in many states and vegetables growers are apt to notice them first since most vegetables are more likely to be noticeably attacked than other crops. Light sandy soils and mucklands favorable for vegetables are especially suited for nematodes also.

Although root-knot nematodes are by far the most common type of nematode on vegetables, several other kinds may bother special crops such as onions, garlic, celery, and potatoes. If root-knot nematodes are in your fields in large numbers, by growing a very susceptible crop such as carrot, parsnip, lettuce, tomato, or celery for at least six weeks when temperatures are above 60° F. you can easily see the knots on the fleshy or fibrous roots.

These nematode pests rob the plants of needed nutrients and moisture and thereby reduce yield as well as quality. In dry weather infested plants will wilt and turn light colored but will not die.

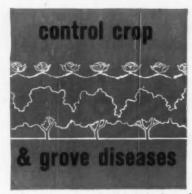
Other kinds of nematodes do not cause knots on the roots but rather make darkened areas on the roots where feeding occurs. To detect this injury, roots must be carefully dug and inspected for spotted areas on sparse root systems. Such plants have few feeder roots. These types of nematodes include lesion, pin, dagger, and spiral. Top symptoms include stunting and unthriftiness in definite spots or areas in an otherwise normal field.

A third type of nematode much less common, the bulb or bloat nematode, attacks onion and garlic bulbs and gains entrance into the outer scales. These scales then become puffy and



"frosty." Such bulbs may later break open or explode to expose the heart of the bulb. Field infestation generally originates from infested sets but once in a field, these nematodes can live over for at least one year. Isolated islands of poor growth or severe stunting offer diagnostic signs in onion fields. If you suspect nematode injury you can do one of the following:

• Fumigate a small strip or area in the center of such a trouble spot using methyl bromide, DD, EDB, or chloropicrin. If nematodes were responsible, rather than poor fartility, (Continued on page 39)



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ONIONS

Controlling Onion Maggot

THE onion maggot can cause more destruction in any onion field than can any other insect attacking the crop. It strikes almost without warning, and once the infestation is apparent there isn't a thing that can be done to stop the destruction.

To make matters worse, three generations of maggots develop each season. They overlap so that all stages of the insect can be found in onion fields from June until harvest. The first generation, however, hits the hardest. The maggots of this brood appear in May when the onion plants are small and easily killed. They bore into the plants near the base where they feed on the soft internal tissues, leaving only the outer wall intact.

The most critical period in the maggot's life cycle is from the time the egg hatches until the young maggot is safely inside the stem of the plant. If the soil is hot and dry, the newly hatched maggots soon perish. But if the soil is moist, they survive almost 100%. It is in this period of their life cycle that the maggots can be most readily controlled, for they are



Onion seedlings after attack of onion magget. Note wilted and dying conditions of the plants.

still outside the plant and in a vulnerable position.

For a number of years the chlorinated hydrocarbon insecticides, such as aldrin, dieldrin, and heptachlor, gave excellent control but the onion maggots have developed resistance to them. Foremost among the new onion maggot killers are the organic phosphates — Diazinon, ethion, Trithion, and VC-13. All of these insecticides are approved for use in growing dry onions. Diazinon, Trithion and ethion have been labeled for treating green or bunching onions.

In tests conducted at Celeryville, Ohio, plots treated with organic phosphate insecticides averaged 1200 50-pound bags per acre compared with 280 for the dieldrin-treated and 100 for the untreated areas

Best results are obtained when the insecticide is placed in the seed furrow at planting time. This can be done easily and accurately by using a granular formulation of the insecticide. The granules are fed into the furrow through a distributor mounted on the onion drill.—J. P. Sleesman, Ohio Agricultural Experiment Station, Wooster.

TOMATOES

Approved for Use

SYSTOX, a systemic insecticide, has been approved for use on tomatoes to within three days of harvest. The new registration is effective in the United States and Canada.

Systox is a spray concentrate which forms an emulsion when diluted with water. It is suitable for use in all power-operated ground sprayers and aircraft sprayers. It is harmless to beneficial predators after application and has long residual effect at relatively low dosages.

Is The East Catching Up?

RECORDS set in recent years by New Jersey growers of processing tomatoes might cause you to ask whether yields per acre will eventually surpass those usually found in California. If this were to happen, we could expect a shift in production emphasis to East Coast areas where large population centers are located.

We can be impressed by the fine performances of these New Jersey growers who set a new state record of 15.8 tons per acre average yield in 1960 to surpass the previous record set the year before. There are definite reasons for the recent record yields. They can be expected to continue when all conditions are favorable, but there are real differences between eastern and western production that will always remain an obstacle to continuous comparable yields and production costs.

One factor, probably the most important reason for increased yields in the East, has been the change in the varieties grown. Whereas Rutgers tomato was for many years the main processing variety it has now been replaced by No. 146.

What does No. 146 have that caused the change? It is resistant to fusarium wilt and is much less likely to show fruit cracking than Rutgers. Even more valuable is the ability of No. 146 to set fruit readily even under adverse weather conditions.

Regardless of the variety grown, fertilizer applied, or cultural prac-





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The C. D. Liquid Fertilizer Corporation of Liberty, Indiana, produces complete liquid fertilizers and chemical solutions. The highly corrosive compounds in these liquids would play havoc with equipment that's made of ordinary materials. So they chose Stainless Steel equipment to handle the corrosion problem. Mr. E. E. Crouse, President of C. D. Liquid Fertilizer Corporation says, "You just can't beat Stainless Steel . . . it virtually eliminates corrosion problems and replacement of tanks.

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Putting Ideas to Work





Field of fusarium resistant #146 in its third picking shows yield potential which has made it the leading processing variety in New Jersey.

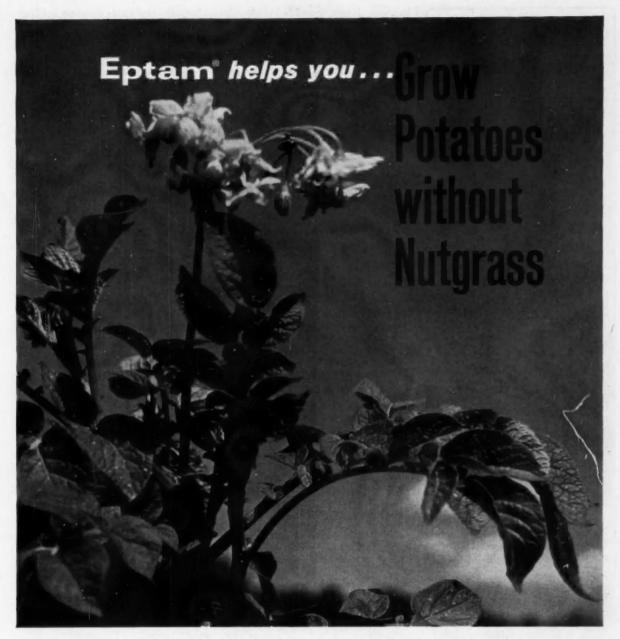
tices, weather is the outstanding difference between the East and West. Length of growing season and control of moisture are major factors favoring the western grower. Eastern growers recognizing this difference have tried to lessen the effect by using irrigation when conditions are excessively dry, but they cannot turn off rain in unusually wet spells or above average rainfall seasons.

The meteorologists at New Jersey Agricultural Experiment Station have shown a definite correlation between the weather and number of growers qualifying for membership in the Tomato Club. In droughty years, the number declines. When rainfall and temperatures are favorable the number soars.

The records of New Jersey growers are given each year in a report of a club which has been growing since it was started in 1934. Originally known as the New Jersey 10-Ton Tomato Club, its name was officially changed in 1960 to the New Jersey 15-Ton Tomato Club. The reasons for this change reflect the progress the industry has made over the years.

In 1934, a 10-ton yield was a real achievement. The state average yield per acre was between 4 and 6 tons. No grower today could stay in business with such an uncompetitive yield. Costs of production, land values, and labor costs have increased until today most New Jersey growers agree that even 10-ton yields will not pay more than expenses, if that.

The decision to change the club's name was made in 1960 to indicate a raising of our sights. Actually 15 tons per acre is no longer a goal, but interest in production practices starts at this point. Recognition in the form of awards is given the top three yield growers and the top three having the best quality based on season grades. The awards are presented annually



Now nutgrass, seedling Johnson grass and annual grasses can be controlled in Irish potatoes. You can stop them before they start with one application of EPTAM herbicide applied directly to the soil.

EPTAM knocks out nutgrass and annual grass seed as they germinate. Potato plants have a full chance to grow without competition for moisture and plant foods. You save money on cultivations, and have a cleaner crop to harvest.

Liquid and granular formulations of EPTAM are available. Follow directions

on the label for timing of application. Immediately after application incorporate (mix) EPTAM thoroughly in the soil. Now you are ready to grow potatoes without grass!

EPTAM is also recommended for control of annual grasses in snap and pole beans, dry beans, alfalfa, birdsfoot trefoil and other small seeded legumes. For more details, see your dealer, or write to Stauffer

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by New Jersey Canners Association after the records of all qualifying members of the club have been thoroughly scrutinized. To qualify for membership, growers must have grown 5 or more acres of tomatoes and produced 15 tons or more per acre.

The highest yield ever grown in New Jersey was achieved in 1960 by Emidio DeSilvio of Cedar Brook, Camden County. His 34.53 tons per acre of No. 146 tomatoes established an all-time record. DeSilvio does many things right to outperform his neighbors. If one thing were to be selected for mention, it would be his close attention to keeping of accurate and detailed records.

Field histories tell him how pH and nutrient conditions change each year. He adjusts his pH and maintains it between 5.6 and 6.0. He decides how much fertilizer to apply after a soil test shows what is needed. Crop rotation including resting of land by growing soil improving crops is helpful in his detailed program. Close attention to drainage is given by panbreaking when the soil is dry in midJune. He breaks through midway between the rows and feels that improved root growth results.

Cultivation, which can do more damage than good if done improperly, is adjusted so roots are not pruned. DeSilvio believes in relatively deep early cultivating with progressively shallower subsequent cultivations. The last time he uses sweeps.

As more eastern growers improve their production practices, the state averages may move even higher. The gradual loss of inefficient growers, especially those farming on poor land, will also have the effect of raising the average. Despite improvements that eastern growers may make in culture

that will raise yields or result in better quality tomatoes, they will still be confronted with climatic variations that can cause wider differences in yields than those expected in the West.

Problems connected with directseeding or staggering of harvest when mechanized harvesting becomes a full scale reality must be solved to enable the earlier pickings and continuous harvests needed to compete with growers and processing plants in the West.—W. Bradford Johnson, Associate Extension Specialist, Vegetable Crops, Rutgers University, New Brunswick, N. J.

What's Their Secret?

66 BELIEVE knowing your soil is the biggest secret in getting a good crop of anything."

R. C. Weigel, Fairview, Pa., must have the right idea for he grossed \$756 per acre on his 17-acre tomato crop last year.

Weigel is one of six successful tomato growers whose fertilizing programs are outlined in the accompanying table. Although they are all located in the fruit belt along Lake Erie, no two growers used the same fertilization program.

Weather conditions last year were generally good, rainfall was somewhat below normal, and the nights were cool. With weather, soil type, and variety the constant factors, the formula for their high production seems to lie in the fertilization program.

The secret, these growers feel, is in knowing exactly what your soil needs, supplying those needs and no more. All six were on a comprehensive soil fertility program. Their soils are checked annually for the major plant food elements and some trace elements.

COMPARISON OF FERTILIZER PROGRAM OF SIX TOMATO GROWERS LOCATED IN FRUIT BELT AREA ALONG LAKE ERIE. AVERAGE VIELD 21.25 TOMS PER ACRE

Name	Acres and Soil Type	Varieties Planted	Fortilizing Program Pounds per Acro	Cultivation Practices	Yield in Tons
Silver Creek, N.Y. Sandy learn Longred Heavy learn Fireball			1500 5-10-10 plewed down, 450 5-10-10 at planting, 25 tens manure (sandy seil),	Usual cultural & spray program. Following to- maliens land will be re- tired for year.	960 (23/A)
R. C. WEIGEL Fairview, Pa.	17 Loam	Moreton Hybrid Fireball Red Jacket	308 ammonium nitrate and 800 Sul-Po-Mag plowed down. 250 11-49-0 at planting.	Usual. Rented land not used for three years.	391 (23/A)
Girard, Pa. Heavy leam Rui Mo		Fireball Rulgers Moreton Hybrid Goneva G-11	200 ammonium nitrate and 300 petash and 1000 rock phosphate plowed down. 250 11-48-0 at planting.	Usual. Clover sed one year old, mowed and left as mulch.	521 (21/A)
NELS A. NELSON Erie, Pa.	21/2 Sandy learn	Mereton Hybrid	250 ammonium nitrate and 300 sulfate of potash and 250 11-48-0 at planting.	Vsual. Followed corn.	58 (21/A)
HOWARD & DONALD GRIMSHAW Willew Brook Farms, Lake City, Pa.	11 Loam	S. F. Cress Rutgers Geneva G-11	200 urea and 300 sulfate of potash plowed down. 100 ammonium retraits side-dressing. 250 11-48-0 at planting.	Usual. Followed corn.	220 (22/A)
J. C. HERHOLD Lake City, Pa.	10 Gravely learn	Red Jacket Longred S. F. Cross	2000 magnesium limestone before plowing. 200 ammonium nitrate plowed down. 500 Sul-Po-Mag and 100 urea side-dressing. 200 11-48-0 at planting.	Usual. Fallowed carn.	250 (25/A)

VEGETABLES:

How to use <u>aldrin</u>, <u>endrin</u> and <u>Phosdrin</u>, <u>Insecticide</u> for season-long control of all major insects attacking vegetables

One aldrin application controls soil insects for the entire season.

One endrin application lasts for days, sometimes weeks—controls the toughest foliage insects.

And when insects attack close to harvest, Phosdrin can be applied up to 24 hours from picking or cutting because it works fast, disappears rapidly, leaves no residue.

TODAY, vegetable growers are faced with a two-part problem: How to get the most effective, long-lasting control of insects—and still avoid having excess insecticide residue on harvested crops.

Aldrin controls soil insects

A single application of aldrin controls cutworms, wireworms, grubs, root maggots—all major soil insects attacking vegetables—for the entire season. Aldrin can be applied as an over-all broadcast treatment *before* planting or, on many vegetables, as a row application at planting.

Control early and midseason foliage insects with endrin

Endrin gives you highly effective,

long-lasting control of a wide range of early and midseason foliage insects.

One endrin application lasts 7 to 10 days or longer.

On most crops endrin can be applied up to 14 days from harvest. On cabbage, broccoli, cauliflower and brussels sprouts, it can be applied up until the time edible parts begin to form. On lettuce, up to 45 days from harvest. On potatoes, endrin can be applied up to 3 days from harvest.

Switch to Phosdrin for late-season insects

Phosdrin, a new phosphate insecticide, kills the toughest insects fast, usually within a few minutes of application. Then, unlike most other insecticides, it disappears rapidly, leaves no residue on harvested crops. That is why Phosdrin can be applied up to 1 day from harvest on many vegetables.

See table below for more complete interval data.

Good mixers

Both endrin and Phosdrin are compatible with most other insecticides and fungicides.

Where to get aldrin, endrin

Aldrin, endrin and Phosdrin Insecticide are available from your local insecticide dealer under many well-known brand names.

Aldrin for soil application is available in liquid, wettable powder and granular forms—and in some areas in ready-made fertilizer mixes.

Endrin and Phosdrin Insecticide are available as liquids, dusts and wettable powders.

When buying these insecticides, always look for the name aldrin, endrin or Phosdrin Insecticide on the label or in the ingredient statement.

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Days between last spray and harvest	1	2	1	3	1	1	2

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The complete, profusely illustrated guide for commercial growers and home gardeners who insist on perfect results. Book covers all the essential facts about the causes, symptoms, and history of the major plant diseases.

VEGE

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Details are given on the influence of weather conditions, soil deficiencies and their effects, current practices in soil sterilization or pasteurization, resistant varieties of vegetables, nematodes, etc. There are separate chapters on the control of seed-rot, damping-off, wire-stem, and the general diseases which occur on many crops. Book explains tested control programs; cites the most useful reference material on each disease. "Helpful to anyone interested in growing healthy vegetables."

—Horticulture. 1960, 893 pp.; 192 ills., tables

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Many readers of this column are new in the business of growing plants. This month and from time to time, Dr. Sheldrake will cover some of the basic steps of plant growing. Many of these will seem elementary to the experienced grower but it is often the simple basic principles that are ignored and cause disastrous results.—Ed.

Having Problems?

SOME readers of this column probably have experienced a number of problems in their greenhouse this year. The problems commonly found by the author are: 1) too much fertilizer which is diagnosed as soluble salt injury; 2) pre-emergence or postemergence damping off; 3) purpling of foliage of tomatoes, marigolds, and others; 4) very poor come-up in the seedling flat. I will cover each of these briefly.

Soluble Salts Injury—Generally, a grower brings this upon himself by simply adding too much fertilizer or improperly mixing the fertilizer with the soil. It is highly recommended that a complete soil test be run on field soil that is to be used for plant growing or a well-mixed sample from the compost. We often neglect to do this and then try to guess how much fertilizer to add.

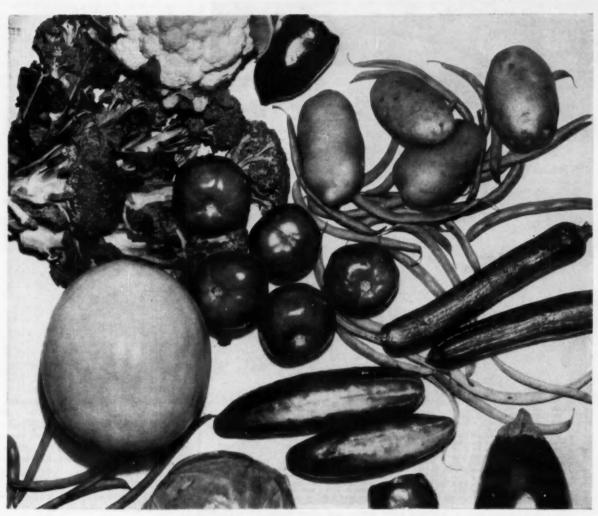
If the soil came from your farm, you probably know the pH. If 25 to 50% peat moss is added, this is generally very acid. For example, if the soil used tests pH 5.0 to 6.0, and if peat is added, limestone at the rate of 3 to 6 pounds per yard of mix should be incorporated. The lime will raise the pH and help keep phosphorus available. Superphosphate is probably the most important additive and 2 to 3 pounds of single superphos-

phate per cubic yard should satisfy the requirements.

If manure is used in the mix, salts are often very high and steaming will aggravate this condition. A good rule to follow, I find, when adding fertilizer other than phosphate and lime is to apply very little and keep the mix on the lean side. Remember, the usual nitrogen and potassium carriers are the items that cause excessive salts. Supplemental feeding while watering is easy. If potassium nitrate (13% N-44% K2O) is available, 1/4 to 1/2 pound per vard is plenty. If you are using higher grade nitrogen carriers, less will be needed. Remember 1/2 pound of fertilizer is one cupfulenough for one cubic yard (27 cubic feet). One bushel of potting soil equals 1.25 cubic feet. It takes about 21 bushels to make up a yard. Remember to keep the mixture lean and feed with a soluble fertilizer mix at a dilute strength when watering.

A good porous mixture and thorough watering will prevent salts injury. If a situation of high salts exists, the only solution is to thoroughly soak the flats, wait 30 minutes to one hour, and soak them again so that water flows freely from the bottom.

Damping-off—The safest preventive against damping-off is steam sterilization (180° F. for 30 minutes). However, putting steamed soil into dirty flats will re-infect the soil. Also, if the end of the water hose is left on the walks of the greenhouse to get dirty, flats can be infected with damping-off organisms while being watered. A broom holder clip is a good



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CROP	TO CONTROL	APPLICATION
Beans	Mexican bean beetle	Up to pod formation
Broccoli Cabbage Cauliflower	Cabbage looper, imported cabbage worm, diamond-back moth larvae, cross-striped cabbage worm	Up to formation of edible parts
Cucumbers, Melons, Squash	Aphids	Up to 14 days prior to harvest
Eggplants, Peppers	Aphids	Up to 7 days prior to harvest
Potatoes	Flea beetle, Colorado potato beetle, leafhoppers, aphids, southern armyworm, green stink bug, potato tuberworm, leaf-footed plant bug	Up to harvest
Tomatoes	Aphids, whitefly, Colorado potato beetle, flea beetle, green stink bug	Up to 7 days prior to harvest

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• 3 inches 1,000 tn 9,000 10,000 to 24,000	1,000	Square \$18.90M \$17.50M	37#	Round \$14.90 M \$13.90 M	25#
• 21/4 inches 2,000 to 29,000 30,000 to 72,000	2,000	Square \$10.80M \$9.90M	36#	88.60M \$8.00M	29#
• 1% inches 2.500 to 27.500	2,500	Square \$7,20M	28.0		

2,500 to 27,500 2,500 \$7.20M 28# 30,000 to 72,500 \$6.70M

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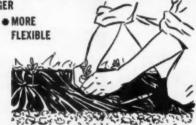
1,000 to 9,000 10,000 to 21,000	1,000	Square \$15.50M \$14.50M	34 #	Round \$13.30 \$12.30
21/4 inches 2,500 to 27,500 30,000 to 72,500	2,500	Square \$8.10M \$7.60M	32#	87.50 \$7.00

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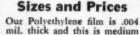
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.0015"—3 ft. x 250 ft., \$4.00 a roll, net .0015"—3 ft. x 500 ft., \$7.50 a roll, net .0015"—3 ft. x 1.000 ft., \$13.2 a roll, net .0015"—4 ft. x 1.000 ft., \$18.56 a roll, met "We ship same day"

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Big Sample Bargain -

Big useable sample piece 10 ft. long by 3 ft. wide. Send \$1.00 cash, check or stamps for this big sample by mail, postpaid device to hold the hose end when not in use.

Seed should be surface treated with captan, Arasan, or other good treating chemical. Immediately after seeding tomatoes, peppers, and eggplant, the first watering should contain captan at 5 tablespoons in 5 gallons. This is enough to water 100 square feet of flats. Specific seed pre-planting treatments such as hot water for tomatoes and eggplant and bichloride of mercury for cucumber, melon, squash, and pepper are a must to control certain specific organisms.

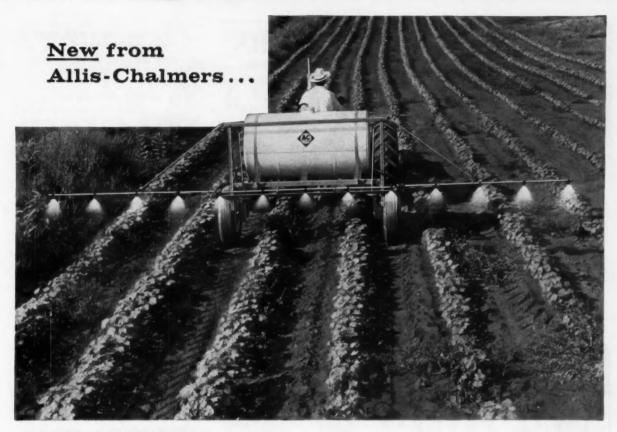
Proper watering and ventilation must be followed. Do not wet down the flats late in the day. They should go into the night on the dry side. Ventilate properly to prevent excessive high temperatures and humidity which cause very soft growth and invite damping-off.

Purpling of Foliage-The purpling symptom on some vegetable and flower plants is not necessarily low phosphorus in the soil. Use a minimum-maximum thermometer at the plant level and maintain the suggested night temperature for that crop. If after raising the night temperature to the proper level the plants do not improve, give them a good soaking with a highly soluble phosphate fertilizer. Calcium phosphate (55% P2O5), ammonium phosphate (48% P2O5), or a high phosphate starter solution (such as 10-52-17) at 2 tablespoons in 5 gallons of water should improve the situation if low phosphorus is the cause.

Poor Germination of Seedlings—Do not be too quick to blame the seedsman for a poor stand. Insure good germination by planting your seedlings in a clean, well-drained media in a clean flat. Firm the media well, especially along the edges and in the corners. Plant preferably in rows and cover with one-eighth to one-quarter inch of media or vermiculite. Do not cover petunia or snapdragon seeds. These seeds are best sprinkled on a previously watered flat of media.

Put the flat in a polyethylene bag or cover the top and sides with a piece of flat plastic. Heat from underneath (bottom heat) is desirable. On bright days shade the flats with an inverted empty flat or newspaper to prevent overheating. When the seedlings have begun emerging in good shape, remove the plastic. Care in watering is of utmost importance at this stage.

After the seedlings are up, move them to a cooler temperature—75 to 85° F. is fine for germination but 60 to 70° F. is preferable after germination. Transplant when large enough to handle. This is usually when the first true leaf has formed. —Ray Sheldrake.



SPRAYERS with BIG-ACREAGE DURABILITY

Here is a completely new Allis-Chalmers sprayer line built to withstand chemical corrosion and hard service. Booms, up to 33 feet wide, are of special resistant alloy aluminum with tough chip- and dent-proof nylon in nozzle eyelets and caps. Durable nylon-roller pumps are offered in two sizes. A 6-roller model develops up to 250 lbs. pressure. An 8-roller model with pressures up to 350 lbs. provides ample capacity to

handle long booms and to provide agitation for wettable powder sprays.

New Allis-Chalmers models include the heavy-duty trailer type shown above, rear-mounted boom sprayers, a broadcast model, and the tool-bar-carried unit described below.

See the difference that Allis-Chalmers quality now brings to spraying equipment.

ALLIS-CHALMERS, FARM EQUIPMENT DIVISION, MILWAUKEE 1, WIS.

ALLIS-CHALMERS



Spray and cultivate together

Now, spraying and cultivating can be done simultaneously or extra drums can be carried on the side of the tractor. New tool bar-mounted sprayer makes both possible. Booms and drums mount on rear tool bar. Booms fold for transport, spray shuts off automatically to save materials when hydraulic lift is raised.

Ask your dealer about the Allis-Chalmers plan to finance your time purchase of farm equipment.





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CUCUMBERS

Ten Tons Per Acre

IF a job is worth doing it's worth doing right, is a firm belief of A. E. Baggett of Roseboro, N.C. Last year he averaged 19,320 pounds of pickling cucumbers per acre. Here's what he did:

 Selected a good, rich sandy loam soil.

2) Treated soil with 2 pounds aldrin per acre for soil insect control.

Fumigated with D-D for nematode control.

4) Broadcast 300 pounds of muriate and potash and used 1000 pounds of 8-8-8 fertilizer.

5) Side-dressed with a mixture of 100 pounds nitrate of soda, plus 100 pounds muriate of potash, plus 100 pounds cottonseed meal.

His stand, according to Assistant County Agricultural Agent Ben Boney, was almost perfect. It took about 500 hours of picking to harvest this crop.

Baggett attributes his high yields to proper fertilization, good pest control, balanced fertilization, and timely harvesting.—A. A. Banadyga, Ext. Hort. Spec., N. C. State College, Raleigh.

COLLARDS

A Harvest Every Month

EVERY month in the year Bill King harvests greens on the 44-acre farm near Thomasville, Ga., that he operates with his father and brother.

His cropping method is simple. He plants turnips, collards, and mustard. After they are harvested, he clears the land and plants the same three crops again. Under this system, some greens are planted every three weeks.

Fertilizer is an important item to Bill King, especially on this relatively small acreage. He puts around 750 to 800 pounds of 5-10-15 under turnips. King also adds 1% borate to the fertilizer, a minor element which is lacking in their soil. His sidedresses with 14-0-14 and 33.5-0-0 fertilizers. The amount of fertilizer varies with the time of year and depends on how fast the greens are needed for the market.

Two varieties of mustard are grown—Southern Giant Semi-Curled and Florida Broad Leaf, as well as Georgia and Vates varieties of collards, and Purple Top turnips.

The Kings use an irrigation system

which is fed from a deep well. They now have 1060 feet of aluminum 3-inch irrigation pipe (Ames ball joint coupling pipe, W. R. Ames Co., Milpitas, Calif.) and Rainbird sprinklers.

"The number of times we irrigate depends on the temperature and size of the plants," Bill King explained. "It ranges from once every two weeks to every four days. We generally apply 1 or 1½ inches or 23,000 to 40,000 gallons per acre."

Most of the greens are sold in Thomasville to locally owned stores and to the chain outlets. One of the chains ships some of the greens to other stores from its Thomasville warehouse.

BROCCOLI

For Both Coasts

GROWERS located on either the Atlantic or Pacific Coast will now be able to grow broccoli varieties developed specifically for their areas. Asgrow Seed Company has just released two new varieties—Atlantic, intended primarily for the Eastern Seaboard, and Coastal, for California.

Atlantic is distinctively small, permitting close planting to give a population of more than 30,000 plants per acre. The central head is dark green and of medium size. Atlantic develops rapidly and may be ready to harvest within six weeks from mid-August transplanting. Only three or four cuttings are necessary because of relatively uniform maturity.

Coastal produces a compact main head. Direct-seeded in two rows per 40-inch bed and thinned to 8 to 10 inches in the row, Coastal produces



Coastal—for California.

up to 39,000 plants per acre. It is an early variety for spring and early summer seeding with harvest in summer and early fall.

David F. Behrent, manager of Asgrow's Agricultural Sales Division, reports that seed of both Atlantic and Coastal will be available for commercial-scale plantings this year. For better crops... Agricultural Chemicals by CHEMAGRO



Guthion <u>Alone</u> Controls Major Insects On Potatoes, Cabbage, Cauliflower, Broccoli!

This single insecticide gives outstanding, all-season protection!

Guthion is outstandingly effective at less cost. It stays on the job... gives long-lasting protection between sprays because of prolonged residual action. Guthion gives a degree of all-season control unmatched by any other spray program.

Treatment should be started early. Continued spraying with Guthion alone controls insects migrating into the fields. Guthion prevents build-up of infestations . . . protects against aphids, imported cabbage worm, flea beetle, spittlebug, leafhopper, tarnished plant bug, diamond-back moth and Colorado potato beetle. Safeguard your vegetables with Guthion. It works!

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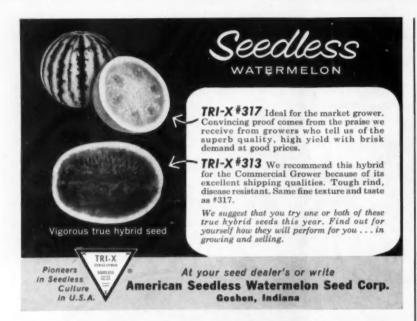
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Answering Your OUESTIONS

IS SEED AVAILABLE?

Last September you kindly gave me a source of seed for the new Epoch tomato. I'm pleased to tell you that this seed is developing very well here and promises high yields. Now I would like to try the Heinz Experimental and C-52 tomatoes discussed in one of your recent issues. Is seed available?—Guatemala.

To the best of our knowledge, Heinz Experimental and C-52 are not yet available commercially. They are experimental lines which Michigan State University tested

HOW TO IMPROVE YIELDS

I'm not getting nearly as good yields as I used to. Can you give me some pointers?—Kentucky.

1) Use certified seed whenever available, and always buy from seedsmen who have a reputation for selling high-quality, diseasefree seeds.

2) Treat your seed. Seed treatment will often prevent failure to get good stands and avoid cost of replanting. In treating, use a recommended chemical such as thiram according to manufacturer's directions.

3) Rotation and sanitation practices are important. It's of little use to treat seed and then plant it in the same spot as last year. Immediately after harvest, plow under old plants or remove and burn them to destroy disease organisms.

4) Use only healthy plants and resistant varieties. Always purchase plants from reputable growers who have practiced disease control in their plant beds, or bet-

ter yet, produce your own plants.
5) Follow the dusting and spraying program recommended by your state agricul-tural college. Sprays and dusts are pre-ventive treatments and are most successful when you select the proper chemical for the particular disease, use the chemical at the right time (before the disease becomes severe and at recommended intervals), and do a thorough job.

6) Control root-knot nematodes by fumigation and rotation. Root-knot nematodes are perhaps the number one disease problem confronting commercial vegetable

growers

WANTS PLASTIC GREENHOUSE BULLETIN

i know you've answered this question before, but could you tell us again where to get that booklet on growing tomatoes in plastic green-houses?—North Carolina.

Write to Department of Horticulture, University of Kentucky, Lexington, Ky. Ask for "Growing Tomatoes in Plastic Greenhouses" by E. M. Emmert, Leaflet

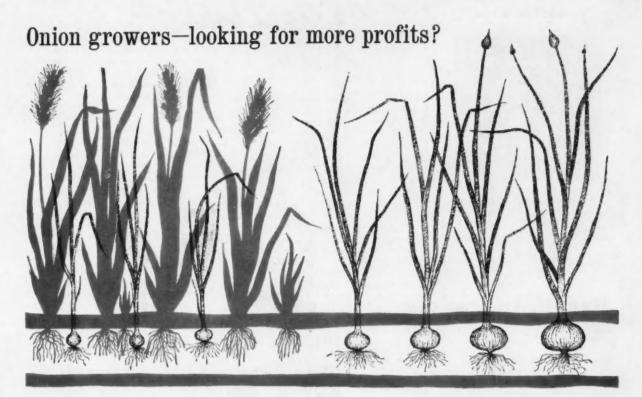
VARIETIES FOR ROADSIDE SALE

Which sweet corn, lettuce, and cucumber varieties should I plant for roadside sale?— New York.

Gold Cup, a new midseason, high quality sweet corn, is fast becoming a favorite in your state. Wonderful and Seneca Chief are still rated tops in quality among late varieties. For early types, Morning Sun and Seneca 60 rank among the best. Golden Beauty, another early variety, yields well and is highly wilt-resistant.

For good all-season eating, plant Bibb, Prize Head, and Salad Bowl lettuce. Bibb is a favorite with many consumers but goes to seed quickly. Prize Head is one of the best for early spring or fall. Salad Bowl doesn't go to seed easily and will give good quality into the summer.

Tablegreen is a new type of cucumber that produces fruit over a long harvest season. It's highly mosaic resistant, relatively straight, firm, and has an attractive deep green color.



Increase your onion yield—control weeds with CHLORO IPC

Chloro IPC is an extremely effective herbicide for use in pre- or post-emergence applications. It prohibits many weeds in onions grown in muck or mineral soils.

Chloro IPC is available as a 4 pound per gallon liquid emulsifiable concentrate used for preparing dilute emulsions for application just prior to emergence, or after emergence during the loop stage of growth or directed post-emergence sprays. Granular Chloro IPC is also available for application where its use has been established. Application must be avoided during the flag stage of the onion.

Increases yield—The use of Chloro IPC in onions has resulted in net gains of \$30 to \$54 per acre. Reduc-

tion of weeds makes more light, space, nutrients and moisture available to the onion crop.

No toxic accumulation—In normal use, Chloro IPC can be applied without danger of toxic build-up to following crops.

Easy handling—Chloro IPC can be used safely around animals and humans, simply by following a few normal precautions. Liquid Chloro IPC mixes readily with water, won't clog spray nozzles.

Increase your onion yield and cut weeding costs. Get a supply of Chloro IPC from your dealer. For complete information, just mail this coupon.



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Pittsburgh Plate Glass Company—Chemical Division Dept. 1953, One Gateway Center, Pittsburgh 22, Pa.

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Please send me information on Chloro IPC for control of weeds in onions.

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The earliest, most uniform heading variety on the market. 10 days or more ahead of most others and range of maturity only 3 days, Short compact maturity only 3 days. Short compact plants with central heads, 6 to 8 in. in diameter. Developed and thoroughly tested by the Michigan Experiment Sta. ½ oz. 75¢, Oz. \$1.25, ¼ lb. \$4.00, Lb. \$12.06.

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Early Harvest. For the earliest crop developing bulbs about 85 days from seeding. Medium size deep globe. Not for storage.

Abundance, 103 days, Large light yellow, deep globe, Heavy yielding. Can be stored to early winter.

Elite. 105 days. Medium size firm fleshed. Excellent yielding long storage variety.

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As It Looks To Me

By JOHN CAREW

Michigan State University, East Lansing

MIDWESTERN experiment sta-A tion dropped its fungicide testing program.

The Canadian centralized vegetable variety trials have ended.

A prominent soil scientist advocates ag colleges getting out of the fertilizer recommendation business.

Agricultural universities are going basic—for the good of all agriculture. They are getting out of testing work and into the "outer space" of plant science.

For years, most experiment stations have performed "consumer guide"

services for growers seeking advice on seeds, chemicals, and equipment. Large experimental farms and labor crews were necessary to compare and evaluate varieties, insect killers, and fertilizers.



American agriculture needed and appreciated this answer man help. No one else offered the same information and growers were not in a position to do their own testing.

But modern farming has developed beyond this. The need now is for imaginative exploration of the fundamentals of plant growth so that man may strengthen his control over economic plants. Agricultural scientists are realizing their time is better spent in original research—on projects they alone are capable of handling rather than in time-consuming programs of evaluating commercial products.

Three developments have been responsible for this trend: the vastly improved technical advice offered by reputable commercial firms and trade publications; the growing realization that most self-educated or collegetrained growers can do their own evaluating; and the "publish or perish" academic climate in most universities that encourages research workers to drop low-prestige testing projects in favor of basic experiments more rewarding in terms of papers and reputation.

Men like Fred Rath of Joseph Harris, Paul Douty of Haviland, "Si" Randolph of George Ball's, Leonard Douglass of Asgrow, and Paul Young of John Bean have won a position of influence on many farms because of their knowledge and sincere desire to help growers. Not that each isn't an aggressive salesman for his company, but that he sells technical assistance as well as products.

Successful growers are less dependent on experiment stations for specific variety, fertilizer, and pest control recommendations. Using facts given them by the extension service and trade publications such as AMER-ICAN VEGETABLE GROWER, they form their own decisions.

By going basic, ag college administrators are taking a calculated risk of losing some farmer support in their state. Many growers will protest the discontinuation of variety, pesticide, and fertilizer trials.

But deans, directors, and department heads are confident that industry leaders will see the long-range value of this policy change.

Corn Borers in Peppers

The European corn borer has become a serious pest of processing and fresh peppers. Because it acts like a different insect when it moves from sweet corn to peppers, a specific program had to be worked out.

Dr. Gordon Guyer, entomologist from Michigan State University, studied closely the activities of corn borer on sweet and hot peppers. He learned that:

 Moths lay the eggs on the underside of pepper leaves, rarely on the fruit.

• Egg laying on pepper leaves, begins around August 1 in Michigan.

· Eggs hatch within five to eight days and the young borers crawl directly to the fruits without feeding on the foliage (in contrast to corn where they normally feed on leaves before entering the stalk).

• Borers normally die if they do not enter the fruit within 48 hours after hatching.

· On sweet peppers, borers generally enter at the stem end; on hot varieties, at the side.

Dr. Guyer suggests these control measures:

1) Spray with DDT, 4 pounds of 50% wettable powder, or 1 gallon of 25% emulsion to an acre. Sevin can also be used at 2 pounds of 50% wettable powder.

2) Begin spraying when eggs are first laid, usually the first week in August. Discontinue DDT five days before harvest and Sevin one day before harvest.

3) Time applications to keep the stem end of the peppers covered with material, usually every five to eight days. THE END.



recognize this pest?

You would know him in an instant if you found him chewing your bean plants this season—you guessed it—Mexican Bean Beetle. • If you would rather not see him at all—better get new, economical ethion. Economical because it gives you control of all the important bean insects plus highly effective control of mites, as well.

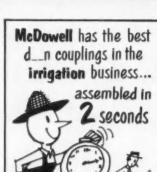
Why pay for a separate miticide—ethion does both jobs.

As a miticide, ethion combines fast initial kill with long

residual action. As an insecticide, it is effective against a variety of insects including Mexican Bean Beetle, bean leaf beetle, and lygus bug on beans. And because it kills both mites and insects, ethion gives you positive control of your principal bean pests at minimum material and

application cost. • See your dealer for complete details. He'll tell you how well it worked in your area last season . . . how you can make it add to your profits this year.

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Registered (Essentially VIRUS FREE) 25 varieties—vigorous Heavy Rooted plants. Also Blueberries, Raspherries, Rhubarb, Asparagus, Grapes, Dwarf Fruit Trees. Complete line of nursery stock at reasonable prices. Free 60-page catalog—Write

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GREENHOUSE CROPS

Nitrogen for Tomatoes

66 APRIL is June tomatoes." This expression is often used by veteran greenhouse growers. They know attention in the early spring to greenhouse management pays off in the heavy June crop.

Management can include prompt attention to removal of suckers, pollination, irrigation, fertilization, insect and disease control. Close observance of nitrogen levels in tomato plants is an important management practice. Application of nitrogen before a shortage develops is important for continued growth of plants while the fruits mature. Repeated use of the diphenylamine test guides growers in frequency of nitrogen application. (See March AVG, page 56.)

Four types of nitrogen fertilizer used by growers are nitrate, ammonium, synthetic organic, and natural organic. Nitrogen in most complete fertilizers is generally the ammonium form. Plants receive most of their nitrogen in the nitrate form. Nitrate nitrogen goes into solution quickly but is not absorbed by soil particles.

Ammonium nitrogen is readily soluble and is absorbed by soil particles. It is taken up by growing plants or changed to nitrate form by soil bacteria. Satisfactory soil moisture, temperature, and aeration quickly convert ammonium nitrogen to the nitrate

Organic nitrogen in the synthetic or natural form must be changed to ammonium and/or nitrate nitrogen in the soil.

The effect of nitrogen fertilizer on soil chemical reaction may be acid or alkaline. This is often measured by the pounds of calcium carbonate (CaCo₃) or limestone needed to neutralize acid formed by addition of nitrogen fertilizer.

Ammonium sulfate (20% nitrogen) will leave an acid residue. This can be corrected with 107 pounds of limestone per 20 pounds of nitrogen applied. It can be used to fertilize greenhouse tomatoes where over-liming has occurred or to increase acidity of the soil.

Ammonium nitrate (33% nitrogen) dissolves with soil moisture and is readily available to the plant. Half is in the nitrate nitrogen form, the remainder in ammonium form. Its acid residue can be neutralized with 36 pounds limestone per 20 pounds nitrogen applied. One ton ammonium nitrate is neutralized with 1200 pounds limestone or calcium carbonate equiva-

Urea compounds contain 45% nitrogen. It is in synthetic form. mobile in the soil until changed to the ammonium form. This change occurs within a few days. One ton urea requires 1500 pounds of calcium carbonate or 36 pounds per 20 pounds nitrogen applied to neutralize its acid reaction.

Growers on sandy, well-drained soils find potassium nitrate supplies nitrogen and potash at a 13-0-44 analysis. It has a neutral or slightly alkaline reaction. Another alkaline reaction nitrogen source is sodium nitrate. However, it is not as popular as the ammonium forms among growers in the Cleveland area.

Lime may be needed during the growing season when soil pH is low. When several applications of lime are needed allow at least 10 days between applications. After liming, do not fertilize with complete or ammonium materials for 14 days as the lime may react with fertilizer and result in injury to plants.-Fred K. Buscher, Cuyahoga County (Ohio) Agricultural Agent.

Form Hothouse Section

REENHOUSE growers of the J Niagara Valley have organized into a group under the Hothouse Section of Ontario Fruit and Vegetable Growers Association. Included in the group are growers from Lincoln, Welland, and Haldimand Counties and part of Wentworth County, east of Hamilton.

There are a total of 250 greenhouse operations in this area, of which 149 were listed as vegetable or plant growers. There were 48 listed as hothouse tomato or cucumber growers with a total of 561,000 square feet of glass out of the 1,000,500 square feet in the area.

Lew Schenck, St. Catharines, Ontario, was named chairman of the new section, with A. Buchanan, vicechairman, and John Wiebe, recording secretary.

Construction details for Cornell University plastic panel greenhouse, names of suppliers of materials, films, and adhesives for plastics, and reprints of current articles on plastic greenhouses are available from

AMERICAN FRUIT GROWER Willoughby, Chio, for 50 cents a set.



HUDSON "928" (Schefenacker) MIST-SPRAYER

Whatever your plant insect or disease problems, here's how this powerful 3-in-1 machine can help you get better control at rock-bottom cost.

Is it a job for spraying? The Hudson "928" applies liquid concentrate at ample velocity for thorough penetration and complete under-and-over-leaf coverage.

Is it a job for dust? Here's the machine to treat large areas fast; applies dust at the velocity needed for maximum control of plant diseases and insects.

Want to dust when plants are dry? You just attach compact water tank, add water to air-and-dust stream. Dust sticks even when humidity is extremely low.

Need to get on the job fast? You're in the field controlling pests while others are getting big rigs ready.

Big machines bogged down? No need to wait for fields to dry when you own a Hudson "928"—it goes wherever and whenever a man can go.

How about inside work? The Hudson "928" will go down narrow aisles—in tight quarters—and mist-spray or dust a house in minutes. In low ceiling houses of average length, just poke the nozzle through a doorway and fill the entire house with billowing spray or dust.

How about cost? Compact, superbly engineered, with work-capacity near that of rigs costing many times more. You'll be surprised by how little it costs to put one in your field. Find out now-mail coupon today!



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THE FIGHT IS ON!!

(Continued from page 14)

Department of Employment to refer workers to struck ranches in several counties. The judicial decisions said the Secretary of Labor had no right to set up regulations which were not spelled out by Congress. Currently United States Labor Secretary Arthur Goldberg and California Employment Director Irving Perluss are petitioning the California Supreme Court to overrule these decisions.

Suspicious of the high court's ultimate ruling, labor recruitment has become a major management issue on California farms. Hundreds of small combines are being created to build housing for labor crews who will be shifted around on operations of grower associates. Large corporations are already staging recruiting campaigns as far away as the Atlantic Seaboard although they expect to get help chiefly from the states of Texas, New Mexico, and Arizona.

Even though California unemployment in industry and commerce is the highest since Depression days—in the range of 500,000 to 600,000 persons—no hope for extra workers is expected from these sources. A strong antipathy exists to undertaking farm

work at any price, and unemployment and welfare benefits discourage shifts to Agriculture.

The critical factor lies in the availability of Mexican braceros who accounted for 71,000 of the work force when farm labor reached its peak of 313,000 hired hands last September. Even though automation is advancing apace, can the California specialty crops be harvested in the coming year with a hired work force at peak demand time of 250,000 hands? The Mexican work force is the target of the labor unions and, because it is tied tightly with national and international politics and diplomacy, it is one area of operation where the grower can exercise little influence.

If the unions continue the same strategy they employed in the Imperial Valley lettuce harvest, the growers can be cut off from bracero crews in summer lettuce, tomatoes, melons, asparagus, celery et al., by governmental edict from Washington or Mexico City.

In the Imperial Valley an atmosphere of violence and potential violence was created. Approximately 40

labor union organizers and cohorts were arrested on misdemeanor and felony charges. There were strikes with accompanying picket lines at 18 lettuce farms. There were fights and friction and there were even cases of alleged arson. The Imperial County sheriff's patrol was expanded and, although order was generally maintained, patrols were on constant alert.

About 7800 Mexican braceros were employed on and off during the lettuce harvest but they probably spent as much time in their barracks as they did in the fields. The Mexican Government constantly protested the threat to its nationals and eventually toward the end of the harvest summoned the work crews home.

Production costs soared as growers had to go beyond the normal police resources of the Imperial Valley to guard their property and their workers. And troubles were so extreme that decisions have been made not to plant at least 30,000 acres of lettuce for next season in the Imperial Valley.

There are additional indications that half of the lettuce producers are studying plans to move their operations from California to the wide belt of suitable land in Texas, New Mexico, and Arizona. Many of these growers admit that labor organizers may follow them into the Southwest but

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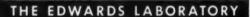
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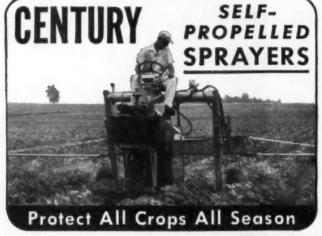
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all of them contend the labor climate is "healthier" there than in California.

The Imperial Valley farm fracas is only a mild prelude to the troubles coming as Agriculture awakens from its winter slumber in the San Joaquin and Sacramento valleys of California.

Current union plans envisage attacks on "non-co-operative" growers in asparagus, tomatoes, and other vegetable and field crops that make heavy use of braceros. Norman Smith, director of Agricultural Workers Union in California, told a labor sympathizing forum in Sacramento that he plans an expanded organization drive in 1961 in all crops and that he'll have more money to spend. Union organizing expenditures provided chiefly by the top echelon AFL-CIO leadership has been estimated between \$250,000 and \$300,000 in 1960.

Just how strong the unions are among farm workers is still a tightly guarded secret. Among the 8000 workers in winter lettuce, it is doubtful if more than 1000 had a direct affiliation with either the Agricultural Workers Union or the Packinghouse Workers.

One thing is sure. A majority of farm workers are cheerfully sitting on the fence and will gleefully take advantage of any pay boosts the union agitation can develop. In the closing days of 1960, farm labor wages in California topped all other states, passing the wage level of Washington state for the first time and reaching a composite rate per hour of \$1.29, 4 cents above Washington and 61/2 cents above the rate of a year previous.

If Congress should fail to permit continued import of braceros into United States Agriculture, wage rates will jump materially in California. This will threaten labor supplies in every other farm region in the country and will force a sharp upward swing in consumer food prices.

A dark cloud hangs over the entire economy of California Agriculture. Under direct menace from the effects of the labor union campaign is a vegetable-melon-strawberry productive industry that last year delivered to American markets 6,268,000 tons of produce worth \$438,319,000 at the farm and five times that amount in the grocery stores.

The embattled farmer standing at bay in defense of his right to hire whom he pleases and to pay wages that he can afford will not lose his fight with Organized Labor until he accepts the labor union as the eco-nomic shepherd of his work force.

How long the grower will resist the labor unions may well be decided by how highly the majority of growers cherish freedom of action in their THE END. farm operations.

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CABBAGE — This crop and other vegetables improve in weight, size, color, sugar content when fed with Sul-Po-Mag. It contains magnesium, potash and sulphur.

custom-tailored vegetable fertilizer formulated to do this quality/yield job well! The key ingredient: Sul-Po-Mag — granular, double sulphate of potash-magnesia — water-soluble to speed deep root expansion, improve top growth and color.

Just how effective is Sul-Po-Mag? These official test results give you a good idea. In Cornell tests, sweet corn showed a 15.6% rise in yield with magnesium added. Potato yields jumped 15% when half the potash was derived from Sul-Po-Mag. Delaware field trials with 4-8-12 and Sul-Po-Mag on lima beans scored a 152% increase in yield. In New York tests, tomatoes produced \$130 more crop value per acre over non-magnesium fortified fields.

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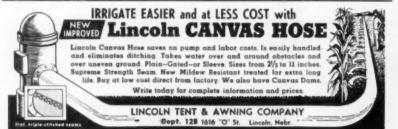
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DISEASE PROBLEMS

(Continued from page 13)

of vegetable diseases. However, on crops such as beans and cucurbits, dusting approaches spraying in effectiveness. Airplane application is often used to supplement ground spraying after heavy rains when an immediate fungicide cover is needed and where the soil is too wet for ground equipment to operate. However, the optimum time to apply a fungicide is before a rain so it will protect the crop during the period of high humidity.

Close attention to application methods and equipment is as important as

YOU be the EXPERT!



HE stand of beans this dry spring was poor, with a definite pattern; alternating four rows of good beans and four with many missing or stunted plants.

A crop of sweet corn the year before had been uniform. The rye cover crop plowed down before plant-ing with 50 pounds of nitrogen per acre showed no such pattern. John T. had used his old 4-row planter but couldn't see how the equipment could have been responsible; it had always performed well. No pest control materials had been used. What is your diagnosis?

(Answer on page 49)

using the proper chemical. The recommended number and arrangement of nozzles range from a minimum of three nozzles per row, one overhead and one on each side when the plants are small, to a maximum of eight nozzles per row, two overhead and three on each side, for sweet corn approaching maturity.

Zineb, maneb, nabam-zinc sulfate, and copper are the principal foliage fungicides used. Some of the others are sulfur to control bean rust, Dyrene to control early and late blight of celery and gray leafspot and gray mold of tomatoes. Dichlone and ferbam are also used to control gray mold of tomatoes. Several combinations and alternations of the above fungicides are used to avoid phytotoxicity or to combat one or more diseases on the same crop.

Until recently, a combination of copper and streptomycin was effective against bacterial spot of pepper and tomato. In south Florida where large quantities of streptomycin have been used, the addition of streptomycin to copper did not improve control, but in central Florida where relatively little streptomycin has been used, the addition of streptomycin to copper improved control. We now have no effective means of controlling bacterial leaf spot in south Florida other than copper, and the effectiveness of this material is limited. The End.

NEMATODES

(Continued from page 15)

vegetables in the treated area should be outstanding in vigor and good health.

 Select a sample of the root system of a sick plant from the suspected field, wrap it in moist paper, place it in a plastic bag, and submit it to your county agent or state extension plant pathologist for diagnosis.

• In the fall, after the crop has been harvested, move some suspected soil in pots to the greenhouse or kitchen and plant a few seeds of tomato, cucumber, onion, and sweet corn. After six weeks at 65 to 70° F. nematodes will make their presence known in one of the previously described ways.

If you know you have nematodes in your fields you can kill most of them by fumigating with DD, Telone, or EDB in early spring or fall. This can usually be done for as little as \$27 per acre for the chemical.

If you wish to get weeds and certain soil-borne diseases also, then other chemicals like Vapam or VPM, chloropicrin, and Mylone are in order. These are more costly but may be practical on high value crops, in seedbeds, or in certain raised bed row crops. Consult your county agent for details.

The End.

A NEW PARSLEY

MINNCURL, a new parsley variety, has been introduced by University of Minnesota, St. Paul. The plant is uniform in size and has a compact growth habit. The deep green, finely cut leaf, and crisp, tight curl make it especially attractive. Its tenderness and high flavor add to its appeal. Seed will be in ample supply next year.







- the Hardie 2-fan Jetaire Row Crop attachment to the frame of any sprayer. It comes complete with a heavy duty air cooled engine and controls.
- Covers 14 to 20 rows of potatoes, tomatoes, etc. with a controlled blanket of mist.
 Sprays 100 to 120 acres per day.
- High velocity air—from two, 26 inch axial flow cast aluminum fans puts the spray where you want it, regardless of wind.
- Air discharge opening rotates through 220 degrees, giving absolute direction control and complete coverage on any kind of ground. You can spray wherever crops can grow.
- Easy reach controls at tractor seat.
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MARKETS...

TRENDS AND FORECASTS

Special Report

AMERICAN VEGETABLE GROWER, APRIL, 1961

IMPERIAL VALLEY LABOR MOVEMENT has been generally reported as unsuccessful. However, this is not likely to deter future union pressures in other areas of California at a later time.

CO-OPERATIVE FARM MANAGEMENT ASSOCIATIONS are being formed in a few vegetable growing areas. Chief objectives are to hire a capable manager to diagnose trouble spots on member farms, recommend changes in farming practices, and increase farm earning power.

THE 1959 CENSUS has uncovered some interesting facts on changes in U.S. agriculture. Briefly, the number of farms has decreased by 23% since 1954, average farm size is up by 60 acres, farms of 500 acres and over now account for 9% of all farms, and land in farms has decreased by 38 million acres.

FROM 1954 TO 1959 number of farms raising vegetables for sale decreased 35% and the number of farms harvesting Irish potatoes for sale decreased by 52%.

FEWER SUMMER AND FALL POTATOES RECOMMENDED BY THE USDA. Specific suggestions are a 2% cut in early summer acreage, no change in late summer plantings, and a 5% reduction in fall acreage compared to last year.

<u>VEGETABLE CROP PRICES OTHER THAN POTATOES</u> are expected to stay above last year's levels for the next few months. Fresh vegetable supplies as well as stocks of processed vegetables are generally down. Supplies of new potatoes as well as stocks of old potatoes are up from a year ago.

POTATO OUTLOOK. Civilian per capita consumption of white potatoes and potato products combined, should be about the same as last year. Consumption of sweetpotatoes is expected to be down quite a bit.

LONG-RUN AGRICULTURAL OUTLOOK. Growth of technology in agriculture is giving us a tremendous imbalance of supply in relation to demand. Unless steps are taken to deal with this the outlook for farm price improvement is very dim for the decade ahead.

EACH FARMER TO FEED MORE PEOPLE. By 1975 one farmer will have to feed 42 Americans, up from 25 at present and compared to only 8 in 1920. Farmers are becoming fewer, but individually more important.

MECHANICAL TOMATO HARVESTING IS MAKING PROGRESS. At least six different machines are being tested and perfected in the U.S. The 1961 season will be largely a test year. By 1962 a substantial part of the crop grown for processing should be machine picked.

STOCKS OF FROZEN VEGETABLES are up about 10% compared to a year ago. However, USDA analysts say demand is up even more. Therefore, retail prices are expected to hold or rise slightly in the next few months.

USDA RECOMMENDS SOME CHANGES IN ACREAGE OF PROCESSING CROPS FOR 1961:
Beets, up 10%; corn for canning, up 8%; corn for freezing, down 5%; limas, no change; peas, up 10%; pickles, no change; spinach, down 5%; snap beans for canning, down 5%, for freezing down 10%; and tomatoes up 5%.

CALIFORNIA LATE SPRING POTATO ACREAGE TO BE UP BY 12%. This is 33% more than 1959. If the crop is favored by good weather, potato prices will likely be depressed from May through August compared to a year ago.

MARKETING MARGINS FOR VEGETABLES ARE UP FROM A YEAR AGO. From 1959 to 1960 market margins increased 4%, and retail prices were up 8%. Of special interest is that prices received by growers went up by 15% at the same time.

STATE NEWS

COLORADO

More on Migrant Labor

FOUR bills for improving working, educational, transportation, and sanitation standards for migrant workers have been introduced in the state Senate. Robert Allen, sponsor of the bills, reports some 25,000 migrant workers, many of them residents of Colorado, would be affected by the proposed legislation.

The proposed bills include the fol-

lowing features:

To educate migrants' children, \$91,200 would be appropriated to assist local school districts. The districts would have power to force migrant children to attend school. Special summer educational programs for migrant children would be expanded.

Contractors and crew leaders would be required to register with the State Industrial Commission under terms of a bill designed to prevent exploitation of migrants. They would be required to file lists of their workers and of growers for whom they have

worked.

The contractor's certificate would be revoked if he misrepresented wages, made false statements to mislead workers or the commission, if his liability insurance lapsed or was canceled, or if he permitted illegal activities on premises under his control.

Growers would be prohibited from contracting with a crew leader unless he had a registration certificate.

NEW JERSEY

Air Pollution Problem

GROWERS in the Garden state suffered heavy crop losses last year due to air pollution. Impurities and toxic gases are detrimental to plant growth. The condition is rapidly growing worse, due to the increase in the number of automobiles, factories, and homes.

Research on the problem of air pollution and accompanying crop damage is now being conducted by department of plant pathology at Rutgers University, New Brunswick, under the direction of Dr. R. H.

Daines.

WASHINGTON, D.C.

Freedom to Grow Fund

THE Growers Labor Committee of Vegetable Growers Association of America have outlined a program of service to help members confronted with labor problems.

Features of the program submitted to the VGAA board of directors for approval include securing legal counsel to guide the committee in setting up the Growers Labor Advisory Service; providing advice and information to local areas to enable them to set up local action groups; investigating strike insurance and assisting local and state associations in setting up strike insurance in their states; sending out special news letters and labor bulletins to keep the membership advised on recent labor developments and court decisions; sending out information pertaining to employees who are covered by Federal Labor Law and setting forth the employee and employer rights and obligations under Federal Labor Law.

Harold Gatzke is chairman of the committee. Other members are Duane Baldwin and Roy H. Burghart. The committee estimated that between \$5000 and \$8000 would be needed to successfully start the Growers Labor

Advisory Program.

To finance the program, a Freedom to Grow Fund has been proposed. To be eligible for the labor advisory service, the grower must be a member of VGAA and must make a minimum payment of \$25 to the Freedom to Grow Fund, plus an additional charge of 50 cents per person on all hired help over 50 at peak of employment. The service would be limited to individual members.

Robert Frederick, executive secretary, reports members will be contacted on the program as soon as it has been approved by the board of

directors.

CALIFORNIA

The Pot Still Boils

LED by two union organizers rethan 150 men and women recently staged a morning-long demonstration in downtown El Centro, to protest against the tactics of sheriff Herbert Hughes in handling the continuing lettuce harvest dispute.

John Soria, organizer for United Packinghouse Workers of America, and Clive Knowles, a UPWA international representative, were among the 33 men jailed on counts of assault and attempted arson following the



TOPS IN NEW JERSEY'S 15-TON TOMATO CLUB

New Jersey's leading tomate growers were recently honored in Atlantic City. They are iseated, left to right) John Grover, Trenton, FFA tomate winner; Bruce Jones, Medford, 4-H tomate winner; Istanding, left to right) James Patituce; Port Morris, top winner in quality class; A. N. Huff, Woodstown, third place yield winner; Johnson Ccoper, Elmer, second place yield winner; and Emidio DeSilvio, Cadar Brook, top yield winner with 34.53 tons per acre. All three growers topped previous record high yields.

attack on a labor camp housing Mexican Nationals working in the Imperial Valley lettuce harvest.

Soria and Knowles, out on bail pending trial, led the protest march around Imperial County Jail and Courthouse. The marchers carried placards proclaiming "Sheriff's Imperialistic Valley," "1000 Deputies," "Sheriff, Are You Neutral?"

GEORGIA

10 Million Pounds More!

SOUTHERN Frozen Foods, Inc., Montezuma, has announced plans to increase their production almost 50% this year, from 25 million pounds of produce processed to about 40 million pounds.

Ed Hamilton, procurement agent, said the increase would be in peas, okra, turnips, snap beans,



FOR DISTINGUISHED SERVICE

One of Michigan's custanding vegetable grow-ers, Veril Baldwin (left), Jackson, was recently honored for distinguished service. Award was presented by Deam T. K. Stockbridge, Michigan State University. Boldwin is president of Na-tional Onion Growers Association and a charter member of Stockbridge Growers Association. With his sons, Baldwin operates 2000-acre form.

speckled butterbeans. Amount of squash processed will remain about the same. The plant will again freeze butterbeans and Irish potatoes. About 90% of the vegetables frozen are grown under contract. The company packs about 4 million pounds each of turnips and snap beans annually.

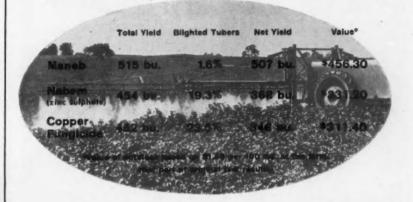
FLORIDA

A Sounding Board

ROWERS and interested parties have been invited to send their comments on proposed legislation concerning the marketing of the state's vegetable crops to Florida Fruit & Vegetable Association. On the urging of several independent growers, FFVA has agreed to serve as a sounding board.

Joffre C. David, Orlando, general manager, says the proposals being considered involve the enactment of state legislation establishing state au-

\$125^{oo} More Per Acre For §650 Extra Spray Cost



Maneb Increases Potato Crop Value By 38% Over Nabam

The results of this recent test by cooperative efforts of agricultural scientists and a grower in Pennsylvania again prove the superiority of maneb over nabam (zinc sulphate) and copper fungicides.

Twelve applications of fungicide were made during the test. However, the plot receiving the copper treatment was blighting so badly that liquid nabam was used for its last three sprays. Maneb was applied at 1½ lbs. per acre, liquid nabam (zinc sulphate) at 2 qts. per acre.

The conclusions derived from this test, as shown in the foregoing table, speak for themselves-more yields, less blighted tubers and the maneb cost was only about \$6.50 per acre more than the nabam sprays.

Results from field trials and commercial use repeatedly demonstrate that DITHANE® M-22 (80%) maneb) is well worth the slight additional cost in superior blight control, in ease of handling, and in helping you grow a more profitable potato crop.

Ask your supplier about DITHANE M-22 maneb fungicide. Make the switch that means extra potato profits for you.



SPRAY AND SAVE WITH ITHANE M-22

F-D-S "TITANTENTS"

HEAVY WAXED—DOUBLE WIRE SUPPORTED



PROTECTED FROM—RAIN— FROST—HEAT—PESTS

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10 x 1134" Base x 51/2" High \$23.90 per Thousand

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thority whereby specific commodity groups, in co-operation with the Commissioner of Agriculture, could help themselves co-operatively to solve basic industry marketing problems.

MASSACHUSETTS

A 5-Cent Raise

GROWERS under contract to Oxford Pickle Co., South Deerfield, will get an extra 5 cents per bushel of pickling cucumbers this year. The 1961 price for pickling cukes will be \$1.05 per bushel or \$2.10 per hundredweight.

David Orloff, a company official, said the company plans to increase its output to full capacity, from 200,000 to 240,000 bushels this year. Oxford also plans to contract for cabbage, cherry peppers, and cauliflower.

ARIZONA

Potato Variety Trials

NORMAN OEBKER, University of Arizona extension vegetable specialist, has launched the first installment of a new potato variety test on the Ed LeBaron Ranch in eastern Maricopa County.

Thirty-one varieties from all parts of the country will be surveyed at the end of the season for yield data and specific gravity. Oebker is looking for new varieties that might be even better than those now in use for the fresh market and for processing.

NEW YORK

Nesbitt Heads NYCCGC

DONALD R. NESBITT, Albion, who for the past six years has served as a director and chairman of Tomato Advisory Committee, has been elected president of New York Canning Crop Growers Co-operative. He is also a member of Tomato Advisory Committee of American Agricultural Marketing Association, an affiliate of American Farm Bureau Federation.

OHIO

Greenhouse Growers Are Smiling

GREENHOUSE growers in the Cleveland area are really smiling. A bonus of nearly twice the average number of sunny hours so far this winter has nursed the greenhouse industry's young spring crop of tomatoes along to one of its best starts in many years.

Cleveland had its sunniest January since 1922, its brightest December since 1933. During January the sun came through 49% of the possible

time

PACKAGING & MARKETING

Togetherness Pays

THE individual grower trying to market his crop is often staggered by the demands of chain store buyers. Today's chain store buyer wants not only volume but a quality pack, competitively priced, uniformly graded and packed, and delivered as ordered on a tight schedule.

But three tomato growers in California's San Diego County refused to be overwhelmed by these demands. Instead, they pooled their resources and formed the Oceanside Vegetable Exchange to process and sell their own tomatoes and others on consignment.

George Nagata is president of the exchange; H. Ukegawa, plant manager, and John Kawano, secretary-treasurer. These men have been growing tomatoes for over 20 years. Last season (from July through December) they grew 300 acres of staked tomatoes.

To handle their crop efficiently, they built a 200x50-foot packing house of concrete-block and steel frame construction. The packing house was ready for operation in

October. Of the 750,000 flats packed by the exchange, 250,000 were processed in the new building.

Seventy people are employed in the packing house. Tomatoes are packed at the rate of 1500 flats an hour, 6000 to 8000 in a normal day's operations.

Incoming tomatoes are washed automatically in chlorine-treated water and waxed. Next they travel over a sizer which eliminates small fruit. The remaining fruits pass over a 20-foot-long color separation table where 16 girls work rapidly to select five different colors; red ripe, hard ripe, salmon, pink, and starbreakers.

Each color is then divided into seven sizes, ranging between 7x7's which pack out 98 fruits to a two-layer flat, up to 4x4's or 32 to a package. The flats are hand packed and the brand label attached, the lot number, color, and size stamped on box. The ripest grades go to the local trade. Starbreakers, the greenest in color, go to distant markets.

Nagata. Ukewaga, and Kawano have vertically integrated by performing the service of processing and marketing themselves. They have found pooled production gives them sufficient volume to meet chain store demands; pooled resources provide money to purchase the most modern machinery and laborsaving devices. They are growing and packing to specification. Together, they are able to supply what individually would have been almost impossible—a uniform, attractive quality pack in volume.

The Slim Look

EVEN produce bags are getting today's popular slim look. Called "Slim-Sell," the new polyethylene bags look better individually and permit a neater and more compact shelf display without decreasing the cubic foot capacity of standard produce bags.

Designed by The Dobeckmun Company, a Division of Dow Chemical Company, the bags are available in



"Slim-Sell" bags permit neater, more compact shelf display without decreasing bag capacity.

nine package sizes for apples, grapefruit, onions, oranges, and potatoes. Each bag is printed in a three-color combination which varies according to the product.

Since each of the produce items is either cut, cubed, diced, sliced, or peeled, the central theme of the design on the face of the bag is a knife and an appetizing display of the product itself. And each bag carries a slogan. For example, on the onion bag, "make your meals taste still better," and on the potato bag, "make the meal complete."

Top-Icing Returns

LOOK for a quick return to topicing on shipments of lettuce, carrots, and cabbage. A revolutionary master transparent bag made of "Strongtex" resin is now beginning to replace paper cartons and master containers made of multi-wall kraft paper.

The Strongtex bags carry two dozen heads of lettuce and are packed 700 to the car. They measure 21 x 43 inches and have perforations at measured distances. Use of these new mas-

BIG, FAST, POWERFUL



Unretouched photo shows Myers 227 series air sprayer in action.

Myers 227 series Air Sprayer covers 300 acres a day

Myers exclusive air handling and two way delivery make the difference! Big, centrifugal fans send the air straight off the fan blades. The air-spray mixture is then delivered out the right and left outlets in a forward and down rolling manner. This ever searching air pattern covers plants from top-to-bottom over the entire spray swath. With a Myers—you get air spraying performance that really penetrates, really covers, really protects.

Specifications -- Myers Field Crop Air Sprayers

	Catalog Number	Air Volume CFM	Air Discharge	Pump Capacity	Tank Size	Acres Per Day Coverage	Eng.
	6095- 227ETF4*	60,000	Two-Side	60 GPM at 200 PSI	400 gal.	300	120
	6095- 225ETF4	45,000	Two-Side	60 GPM at 200 PSI	400 gal.	250	100
	6020- F29TR4**	30,000	One-Side	20 GPM at 400 PSI	400 gal.	100	25
	6020- F24TR2**	10,000	Two-Side	20 GPM at 400 PSI	200 gal.	50	9

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Prove to yourself —ask your Myers Sprayer Dealer for a demonstration in your own field. He'll be glad to show you how a Myers air sprayer will improve your crop yields —increase your profits.



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- plants. Convenient Plant Tables for Dropper. Comfortable Plastic Scala Available. Adjustable side bars, for exact packing pressure desired.

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D. R. ELLIS MFG. COMPANY Verena, Wisconsin

ter bags is economical in various ways. The bag itself costs only 18 cents, against a 30-cent cost for the carton. In addition, they are extremely light, weighing only one-fifth pound each.

Perhaps the biggest saving is in the return to top-icing. Ice pack has always been considered the finest method for shipping lettuce, the trickling ice water serving to keep the lettuce crisp and firm. The present practice of vacuum cooling and absence of ice during shipment both serve to dehydrate the lettuce, and it is estimated that as much as 50 to 60 gallons of water are pulled out of a carload of lettuce as it dehydrates on the way to market.

First shipment of lettuce in the new bag was made by F. H. Vahlsing, Inc., Edinburg, Texas, who shipped a carload of Iceburg to Jacksonville, Fla. The firm has also shipped carrots and cabbage in Strongtex resin bags.

Blocking Light Rays

DOTATOES packaged in clear poly bags were easy to handle. attractive to look at, but they caused a serious merchandising problem for Maple Leaf Fruit Co-operative, Canning, Nova Scotia. Light rays penetrated the bags on display in supermarkets, causing the potatoes to discolor with a green tinge.

The co-operative's Harold Gates solved the problem by putting a solid white panel on the front of the bags. The panels not only blocked light rays but provided a handy place to imprint the co-operative's name and brand design. The back of the bag is clear poly so that customers may inspect the product.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Apr. 9-12—National Association of Produce Market Managers convention, Town 'N' Country and Holiday Lodge motels, Myrtle Beach, S.C.— Jules S. Cherniak, Sec'y, Div. of Markets, New York State Department of Agriculture & Mar-kets, Albany, N.Y.

May 4—Greenhouse Vegetable Day, Ohio Agri-cultural Experiment Station, Wooster.

June 19-24—Pacific Division American Asso-ciation for the Advancement of Science, Univer-sity of California, Davis.

Aug. 22-23—Ohio Pesticide Institute, Ohio Agricultural Experiment Station, Wooster.

Sept. 14-16—Texas Citrus & Vegetable Grow-s & Shippers convention, Shamrock Hotel,

Sept. 27-29—Florida Fruit & Vegetable As-sociation convention, Hotel Americana, Bal Har-bour.—J. Abney Cox, General Convention Chair-man, Princeton.

Oct. 1-4—Produce Packaging Convention and Exposition, Chase-Park Plaza Hotels, St. Louis, Mo.—Robert L. Carey, Exec.-Sec'y, Produce Packaging Association, P. O. Box 29, Newark, Del.

Oct. 29-Nov. 1—National Agricultural Chemicals Association annual meeting, The Homestead, Hot Springs, Va.—L. S. Hitchner, Executive Sec'y, 1145 19th St., N. W., Washington 6, D. C.

NEW INSECTICIDES

(Continued from page 11)

be applied to plants to be fed to livestock. On beans it can be used up to seven days before a harvest and on tomato the waiting period is two days.

Dibrom is a phosphate of low toxicity that is especially useful in the control of the cabbage looper on leafy vegetables near harvest. About 1 pound is needed per acre. It can be used on a long list of crops up to four days before harvest and will help control other insects such as aphids and thrips.

Like most insecticides that can be used so close to harvest, it dissipates so rapidly that it must be applied frequently. However, dibrom-treated plants can be used for feed.

Diazinon, a phosphate insecticide of moderate toxicity, is best known for its outstanding effectiveness against leafminers on such crops as tomato, pepper, and melons. However, of the safer insecticides, it is also one of the most effective against aphids and is fairly effective against spider mites and thrips.

Diazinon is one of the few insecticides that will control the southern potato wireworm which has been so destructive to potatoes in the south-Atlantic and Gulf Coast areas in recent years. On foliage the usual dosage is about ½ pound per acre in sprays and I pound in dusts.

Like many of the other phosphate insecticides, it can be applied to plants to be fed to livestock, but it can be absorbed through the skin and must be handled with care. Waiting periods required between application and harvest range from three days on tomato, to 14 on some of the leafy vegetables.

Thiodan, a chlorinated organic of moderate toxicity, has been outstanding in its effectiveness in the control of potato insects, particularly aphids, after a thick canopy of foliage has made it impractical to use ground equipment. Thiodan is a slow fumigant and works best in thick foliage that is difficult to treat with ordinary insecticides. Indications are that Thiodan does not usually interfere with the activity of predators of aphids in potato fields.

Thiodan at ½ to 1 pound per acre is effective against a wide variety of insects including aphids, the Colorado potato beetle, whiteflies, leafhoppers, plant bugs, stink bugs, the potato tuberworm, and flea beetles. It should not be used on plants to be fed to livestock.

Demeton, a highly toxic phosphate that should be used only by trained personnel, is one of the most effective insecticides available for use against the cabbage aphid. It can be (Continued on page 51)

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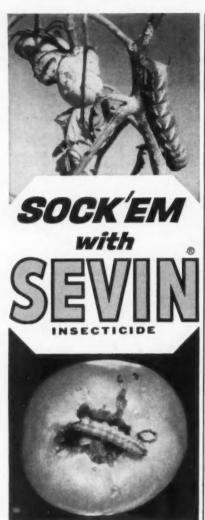
Copper fungicides offer many advantages—Tri-Basic Copper Sulfate can be used in spray or dust form on practically all truck crops and many fruit crops in the control of persistent fungus diseases—It is compatible with other pesticides and gives the added advantage of correcting nutritional deficiencies where there is insufficient copper in the soil.

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For samples or literature, make request on your firm's letterhead.





Tomato insects are easy to control more effectively with SEVIN. From early-season flea beetles to fruitworms, fall armyworm, hornworms, stink bugs, SEVIN provides ideal control right up to harvest. SEVIN gives lasting residual protection as spray or dust, by ground or air.

Use SEVIN also on beans, sweet corn, potatoes, cucumbers, summer squash, eggplant and peppers to control major insects. The new low 1961 price makes SEVIN highly economical. When insects attack—SOCK 'EM with SEVIN!

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WEED CONTROL ...

Here's an up-to-date list of the recommended herbicides with rates of application and the crops on which they can be used

By JOSEPH D. CAMPBELL

Monsanto Chemical Company, St. Louis, Mo.

THE vegetable grower, once typified as the man with a hoe, is entering a new era—the age of chemical power. Bottled as liquids or trapped in granules are powerful compounds which, when properly applied, prevent or inhibit growth of weeds, but leave the crop unmolested.

And this chemical power means lower costs for the grower. For example, it has cost as much as \$200 an acre to hand hoe onions grown in the muck soils of New York. By contrast, the cost of weed control from two applications of Randox at the rate of 6 quarts per acre would be approximately \$21.

Just as in the case of insect and disease control, the proper use of herbicides requires a good deal of know-how and special equipment. Although the amounts required are often very small, they must be applied precisely.

Certain compounds have become well accepted by vegetable growers; others are being actively tested. Following is a discussion of those in common use and under test.

ALANAP® -3 (NPA) (Naugatuck): Preemergence at 4 to 8 pounds per acre on cucumbers, cantaloupes, watermelons, asparagus.

AMIBEN (Amchem): Being tested at 2 to 3 pounds per acre on carrots, peppers, transplanted tomatoes, some transplanted crucifers, particularly on moist soils.

ATRAZINE® (Geigy): Requires considerable moisture to be effective. Pre-emergence at 1 to 2 pounds per acre on sweet corn.

CHLORO IPC (Columbia-Southern): Pre-emergence on lettuce, onions, spinach, beans, carrots. More effective on grassy than on broadleaf weeds.

DALAPON (DOWPON®) (Dow): Grassy weed control in asparagus beds before cutting, after spring or summer disking at 5 to 10 pounds per acre. Pre-emergence on Irish potatoes at 3 to 10 pounds per acre. Grassy weed control along irrigation ditches; quackgrass control as pre-planting treatment. Apply ahead of any crop, either as spring or fall treatment.

2,4-D AMINE (Monsanto, Dow, Amchem, etc.): Controls many broadleaf weeds in established asparagus beds at 1 pound per acre. Pre-emergence on sweet corn at ½ to 1½ pounds per acre, also as directed post-emergence spray. Caution

must be observed when applied as postemergence because some varieties show less tolerance than others to the chemical.

DNBP (Dow, Standard Agricultural Chemicals): Pre-emergence on lima and snap beans, cucurbits, peas, sweet corn at 7.5 to 9 pounds per acre; on Irish potatoes at 3 to 6 pounds. Post-emergence on sweet corn at 3 to 4.5 pounds per acre; on peas at 1.5 to 2.25 pounds.

DIURON (KARMEX*) (DuPont): At lay-by on tomatoes in Florida mineral soils. Requires moisture to be effective. May leave residue which could harm sensitive crops.

ENDOTHAL® (Pennsalt): On table beets at 4 to 6 pounds per acre; on spinach (except California) at 2 to 3 pounds. Being tested on transplanted sweetpotatoes, established beets, as granular application on transplant tomatoes.

EPTAM® (Stauffer): Pre- and postemergence on snap beans, pole beans, Irish potatoes, sweetpotatoes as preplant incorporated at 3 pounds per acre. On nutgrass at 4 to 6 pounds per acre. Being tested as post-emergence incorporated treatment on onions and on established asparagus beds at time of preparation for cutting.

*FALONE® (Naugatuck): Being tested as pre-emergence on Irish potatoes, sweetpotatoes, sweet corn, asparagus (both seed and cutting bed).

HERBISAN® (Roberts) - SULFASAN® (Monsanto): Pre-emergence on onions up until 21 days from harvest. Being tested on beans, Irish potatoes.

MONURON (TELVAR®) (DuPont): On established asparagus at 1 to 4 pounds per acre applied just prior to emergence in spring and after harvesting. Lighter rate recommended for light soils or soils low in clay or organic matter.

NEBURON (KLOBEN®) (DuPont): Registered for use on established tomatoes east of Rocky Mountains. Performance contingent on adequate moisture.

RANDOX® (Monsanto): On onions (multiple applications), cole crops, peas, sweet corn, sweetpotatoes (Louisiana), tomato transplants (Indiana-granules only) at 4 to 6 pounds per acre, even under relatively dry conditions. Being tested on Irish potatoes.

RANDOX T (Monsanto): Being tested on sweet corn, peas, onions, where grassy weeds and certain broadleaf weeds such as smartweed, pigweed, lambs-quarters, purslane are prevalent. Usual rate is 4½ quarts.

SESONE® (CRAG HERBICIDE) (Union Carbide, Amchem): Pre-emergence on asparagus and Irish potato. Activity by soil bacteria releases herbicidal properties. Recommended at 2, 3, and 4 pounds per

acre (over-all) on light, medium, and heavy soils, respectively.

SIMAZINE® (Geigy): On sweet corn at 1 to 4 pounds per acre. Being tested on asparagus, Irish potatoes, tomatoes. Because it is quite insoluble, considerable moisture is necessary for activation to control grassy and many broadleaf weeds.

STODDARD SOLVENT: Oils similar to Stoddard Solvent were reported in 1944 for use as contact sprays for weeds on crops such as celery, carrots, parsnips. Rates vary from 20 to 100 gallons per acre, depending upon condition. Slight damage to foliage often occurs, but crop usually recovers.

TCA (Dow, Hooker, General Chemical): Pre-emergence on beets at 6 to 9 pounds per acre; on cabbage and cauliflower either

READ THE LABEL

Be sure the crop you want to spray with a herbicide is listed on the label. Several of the chemicals included here have an asterisk (°) alongside the trade name which means that they are still in the testing stage.

It's wise to READ THE LABEL before you use any type of pesticide. If in doubt about their use, consult your county agent, farm advisor, or experiment station.

as pre- or post-emergence (directed) to control germinating seeds or very young grass seedlings at 6 to 9 pounds.

VEGADEX* (Monsanto): Pre-emergence on celery, sweet corn, the cole crops, greens (such as spinach, lettuce), table beets, cantaloupes, tomatoes, transplanted tomatoes to control annual grasses, certain broadleaf weeds such as spiny or redroot pigweed, henbit, and purslane. Rate of application varies from 2 to 8 pounds per acre, depending upon crop, stage of development, weather conditions. Under cooler conditions rate should be reduced. Requires moisture within a few days after application. More effective on organic soils (muck) and loams or sandy loam soils.

Soil Treatment: In seedbed preparation it is necessary not only to control weeds but also nematodes and soil-borne diseases. Some chemicals being used are Mylone[®], Vapam[®], Dowfume[®], MC-2, Brozone[®], Du Pont's VPM, Trizone[®], Picfume[®], Weedfume[®], Larvacide[®].

Combinations: When herbicides perform particularly well against specific weeds and less than satisfactory against others, two herbicides are often mixed together. Indiana recommends a combination of 2 pounds of CIPC plus 8 pounds DNBP per acre on snap and lima beans. In Maine a combination of Vegadex and DNBP is recommended for use on beans. For over-all weed and grass control in potatoes, a combination of DNBP-dalapon is used just before potato emergence. Also used for quackgrass control on same crop. A combination of Vegadex and

CIPC is recommended on fall-planted spinach.

Liquid vs. Granular: Where equipment is available to properly apply liquids under low pressure, this method will continue to be used. It is usually the more economical form, since the active ingredient is more concentrated.

Use of granular materials is developing rapidly. Granules are easier to apply; water or pressure spray equipment is not necessary. Granules solve "drift" problem often experienced with sprays. There is definite advantage in using granules on established plants; more of the compound reaches the soil since granules tend to filter down through the foliage. This results in better weed control; eliminates any possible damage to foliage from liquid sprays.

Growers have been disappointed by poor results caused by improperly calibrated equipment or lack of uniform granule distribution. At present the availability of suitable granular applicators is limited.

Application Through Irrigation Systems: Soluble or emulsifiable herbicides may be applied through sprinkler irrigation systems. This reduces labor costs; however, an uneven spray pattern results in uneven distribution and variable results.

Trends: Pre-emergence herbicides are growing in popularity and usefulness. Chemical weed control is replacing both mechanical and hand cultivation. Generally, this will require multiple applications, especially on long-season crops. There are few compounds which will remain active more than four to six weeks. Those which have lasting residual effects may pose a problem when sensitive crops are grown on the same land, especially in the same year.

The End.

Answer to YOU be the EXPERT!

(See page 38)

The equipment was at fault. Two of the adjacent split boot planting shoes were so worn they put the fertilizer in with the seed. If heavy rains had fallen following planting no injury would have resulted. But this was a dry spring and the fertilizer burned the sprouting beans. As Mr. T. planted back and forth across the field, the two "poor" rows planted in one direction were paired with two other "poor" rows coming back.

Next year, Mr. T. will buy a planter that places fertilizer in bands separately from the seed or will replace the worn shoes.



SEVIN

SEVIN gives excellent control of corn earworm, European corn borer and sap beetles—at low, low cost with the new low price. Yields of undamaged ears are as good or better than those obtained with the best of other insecticides.

You can use SEVIN on the day of harvesting fresh market corn to control insects. Canning corn fodder, husks and cobs may be fed to livestock without contamination of milk or meat by residue. Just follow label directions and allow seven days between application and harvest.

Use SEVIN also to control important insect pests of beans, tomatoes, cucumbers and several other vegetables. When insects attack—SOCK 'EM with SEVIN!

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Perfect Seedbeds

Last fall in Wisconsin I watched some of my vegetable grower friends use a new implement which made a beautiful seedbed. The new pulverizer has a "retractable landing gear" which



makes it easy to tow from one field to another. It is available in 10- and 12-foot rolling widths, yet when being moved it is no wider than your tractor, making it easy to get through the gates and on the road. Write Art Carsten, of Brillion Iron Works, Brillion, Wis., for more information.

This Is Hot

Growers in New England are using a new bag closure which is simple and inexpensive. Called the Kisco-Bip, it's a plastic clip which not only closes your polyethylene bags air



tight, but can be reused and is ideal for use on display racks. The new closure has been used successfully by growers in France and will help you. Write Kisco-Bip Corporation, 196 Ashburton Ave., Yonkers, N. Y., for the facts.

I've Used It

The new sprayer pictured is ideal for greenhouse or row crop spraying where your big sprayer can't operate or to apply chemicals in certain areas for special control purposes. As a

New for You

sprayer, the new machine discharges liquid concentrates as a fine floating mist, using only a small percentage of the amount of water required for conventional spraying. As a duster, it discharges dry pesticides at the velocity needed for deep penetration of dense foliage and uniform coverage. In addition to these distinct advantages, the machine can be used as a



flame thrower to burn up brush and weeds in the field. I was impressed, too, because all moving parts are mounted on rubber, decreasing vibration to almost nothing. The spray tank is plastic, thus free from corrosion, and the lightweight motor develops more efficiency at about half-throttle. You should have one of these. They are inexpensive. Write Bob Geuther, H. D. Hudson Co., 589 E. Illinois St., Chicago, Ill. and ask him for details.

Greenhouse Air Circulation

Greenhouse vegetable growers in Ohio are using a new fan which has proven itself during the last two seasons. The fan was developed in Hol-



land and gives "live air" circulation night and day, providing even temperature and humidity, reducing disease, saving fuel, and promoting greater yields. Write Ken Nelson, Jednak Floral Company, P. O. Box 1917, Columbus 16, Ohio. He will send you full details.

One for Every Purpose

About a month ago I saw the new 1961 line of John Bean sprayers.



There is one for any and every purpose and you'll find the one you need to insure better pest control during the months ahead. The boom sprayer pictured above is ideal for you. For more facts on the John Bean line, write Art Gerard, John Bean Division, Food Machinery, and Chemical Corp., Lansing 4, Mich.

Better Hunting

Hunting isn't what it used to be there aren't as many birds and there



are more hunters. One way to increase wildlife population and make hunting more enjoyable for you is to plant food on which wildlife thrives. A new wildlife corn variety is just the thing. The new variety grows shorter, allowing you to see other hunters and your dogs. It has a strong stalk that allows it to keep standing through two seasons. The ears are at variable height which permits early fall feeding on the low ears and winter feeding on those higher up when deep snow is on the ground. Write Bob Strosnider, of Robson Quality Seeds, Inc., Hall, N. Y., for your supply of Robson's Seneca Wildlife corn.

NEW INSECTICIDES

(Continued from page 47)

used on the foliage of broccoli, Brussels sprouts, cabbage, cauliflower, and lettuce, or it can be used in the transplant water to protect young plants while they are becoming established.

Unlike ordinary insecticides, demeton acts in a systemic manner. It is taken up by the roots from the soil and translocated to the young leaves where it kills only the insects that feed on the plants. Properly applied, demeton kills almost all aphids present without serious damage to parasites and predators of the pests. It persists in the plants and gives protection longer than most other insecticides.

Demeton is also useful on beans and tomatoes where it controls both aphids and spider mites. Disadvantages are its ineffectiveness against most other vegetable insects, its high toxicity to man, and the long waiting period of about three weeks that must be allowed between application and harvest.

Phosdrin, another highly toxic phosphate compound, also is a systemic insecticide. Unlike demeton, however, it is used only on the foliage and does not persist in the plants. It is applied at about 1/2 pound per acre and is especially useful in the control of aphids, spider mites, and caterpillars on leafy vegetables near harvest. On many of these crops it can be used up to the day before harvest. Phosdrin is dissipated by the plants but on equipment is quite persistent. Extreme care must be taken in handling this material and it should not be trusted to inexperienced operators.

Bacillus thuringiensis, a sporeforming bacterium reported to be harmless to man and animals but deadly to certain insects, represents a new type of insecticide of the future. Applications of spores of this bacterium to cabbage plants as a spray or dust are fairly effective in killing the cabbage looper and other caterpillars for about a week. Spore preparations suitable for this purpose are available under one or more trade names.

There is considerable interest in this method of controlling insects in view of growing public concern over chemical residues in foods. However, more needs to be learned about how to formulate, standardize, and use B. thuringiensis preparations before they can be depended upon for control of cabbage caterpillars.

Of the insecticides placed on the market in recent years, the above are a few of those of most interest to the vegetable grower. Each has a special place in agriculture. Each should be used only where specifically needed and only in accordance with instructions on the package label. THE END.

Burpee Hybrid Cucumber—

True F, hybrid, white spine slicing cucumber, 8 in. long, 21/2 in. wide, square at both ends. Outyields open-pollinated varieties, has high resistance to mosaic and downy mildew. Outstanding market variety.



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DEALERS WANTED

Or Do We Fight?

A Definition

"SHALL agriculture be sacrificed as a political expedient and made to conform to directives put forth by labor leaders and politicians from non-rural areas or do we fight?"

That cry for action from Phil Luke, a leading potato grower in Fulton, N. Y., and vice-president of potato section, Vegetable Growers Association of America, is one every grower should heed. Too often and too late do we realize that we are victims of detrimental legislation and other shackles that impede our way of life and operations.

Too many growers confine their thinking and their actions within the boundaries of their own private operations and let the rest of the world go by, rugged individuals to the end. The time is past when an individual can stand alone and hope that adversity will pass him by, for legislation from national sources affects everyone and their business, agricultural or otherwise.

Big government, big business, and big labor unions are demanding changes in the production, marketing, and distribution of agricultural products and we, the growers, must either

WHAT'S an agricultural enabling

abling act" seems to frighten most

growers. They shrink from the possi-

bility of any legislation being enacted

which seems to bear the connotation

of "enforcing" them to do something

necessary if you, as a progressive

grower of tomatoes, lettuce, or any

other vegetable or fruit crop, want to

The very sound of the term "en-

combat or concur with these proposals.

If fight is the answer (and it should be) let's unify our thinking and actions and present programs that are acceptable to agriculture and the welfare of all good citizens.

Get behind your commodity organizations and help the men in charge. They are, with few exceptions, dedicated to their work and are up against a stonewall from lack of finances and co-operation.

Have your Washington office make the appointments and send your men to the capitol to testify pro or con when agricultural legislation before Congressional committees is being discussed. A versatile grower who knows his subject leaves a much greater impression on our legislators than a whole library of nicely written briefs submitted by a professional lobbyist.

"It is a proven fact that in times of sickness or trouble people are willing to drop petty animosities and work together," Luke points out. "Agriculture is sick and in trouble today."

Among other things, the act also

In addition, it is noteworthy that

has some authority for educational

programs and for research-but not

most vegetables and fruits for canners and freezers are not included under the federal legislation. A federal marketing agreement, however, can be entered into covering any agricultural commodity or product thereof.

An enabling act when passed by a state legislature makes possible the setting up of state marketing orders. If desired, these programs can include quality control. The state marketing order can include everything the federal order includes—plus advertising.

In other words, an agricultural enabling act is permissive legislation. By itself it does not affect any grower, canner, consumer, or anyone else. But after an enabling act is passed, it is possible for growers producing a crop such as tomatoes, lettuce, strawberries, or other farm commodities to establish a state marketing order with-

QUOTE-OF-THE-MONTH

"When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization."

-Daniel Webster

out going to the legislature again to get a bill passed for their individual

Several states have passed enabling legislation. Notable among them is California. As a result of this legislation in the Golden state, over 70 programs are in effect. Arizona, Colorado, Utah, Wisconsin, and New York are among the states which have passed enabling legislation. Five Texas fruit and vegetable crops are now covered by federal marketing orders and agreements.

It is time for growers to do some hard thinking on the agricultural enabling act. If you and other growers in your state are anxious to improve market outlets and eventually to increase net returns for your commodity, and to raise funds for advertising and promotion programs, an enabling act will be the first step toward those desirable ends.

Because marketing agreements and orders are tools with which growers for the most part do not have an extensive working knowledge, future issues of American Vegetable Grower will explain the pros and cons of these useful tools.

VEGETABLE CONVENTION

for promotion or advertising.



"And again I say to you cucumbers and selons—down with aphids and spidermites!"

that may hamper them in the growing and marketing of their crops. But an "enabling act" is absolutely

join hands with growers of the same crops in your state and enter into a marketing agreement or a marketing order or into an advertising program to promote your products co-operatively.

There are two kinds of enabling acts—a federal and a state. The federal enabling act was passed by Congress in 1937. This act contains

gress in 1937. This act contains authority for marketing agreements and orders which may provide for surplus control, quality regulations,

and control of unfair practices.

Coming Next Month

- The Vanishing Farm Worker
- How Tomatoes Will be Harvested Mechanically
- Pennsylvania's Struggle to Conquer the Garden Centipede

act?



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BLIGHT-FREE

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sures good coverage and it adheres well to leaf surgyour faces and resists weathering. C.O.C.S., like Thiodan, is extremely mild, and protects plants with no harmful effect on foliage, or yields.

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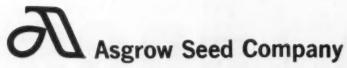
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